DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS

PROGRAMME PROPOSALS
AND
BUDGET ESTIMATES
2003-2004
AS RECOMMENDED BY DAB
ON
24 FEBRUARY, 2003

NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING
SRI AUROBINDO MARG, NEW DELHI-110016

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PROGRAMME PROPOSALS

Research

1.	Identification of Technology Innovations and Applications for Front-line curriculum for S&T (upto secondary level)	1-5

Research-cum-Development

2.	In-depth study of Science & Technology curriculum for higher secondary stage	6-11
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10. Development of Laboratory Manual in Physics for higher secondary stage 52-59

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12. Development of laboratory manual in Chemistry for higher secondary stage 66-72

13. Development of teachers handbook for designing mathematics laboratory in schools 73-77

14. Development of textbook in Science and Technology for upper primary stage (class-VIII)(Hindi & English) 78-84

15. Development of textbook in Mathematics for upper primary stage (class-VIII)(Hindi & English) 85-91

16. Teacher's handbook on Integration of Science with Technology at the upper primary stage 92-95

17. Assessment of laboratory requirements for carrying out practicals in Science and Technology at secondary stage 96-100

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20. Development of (a) Virtual Experiment; and (b) Real Time Measurement 109-113

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22. Design and development of Science and Technology Kit for upper primary stage 119-123

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Training

25. Orientation of KRPs (PGTs) in Biology for higher secondary classes 134-139

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32. State Level Science Exhibition for Children 2003-04 168-173

33. Jawaharlal Nehru National Science Exhibition for Children 2003-04 174-178

As recommended by the members of DAB, two more proposals will be undertaken by this Department. (These two proposals will be submitted in the Academic Committee meeting as supplementary)

34. Training of Resource Persons/Teachers of North-East region in Physics, Chemistry and Biology at the Higher Secondary Stage

35. Mega project on the practicals for bringing skill based competence in Science at the Secondary and Higher Secondary Stage

ROLE AND FUNCTIONS OF THE DEPARTMENT

The Department of Education in Science and Mathematics in a think-tank for Science, Mathematics and Environmental Education at the school stage and is responsible for carrying out research, development, training, evaluation and extension activities in these areas A good deal of experiments with teaching-learning strategies involving new methods and technologies are conducted by the Department Development of instructional materials and training of teachers and teacher-educators meant to bridge the gap between the frontiers of Science, Mathematics and Technology and the School Community.

Different curriculum groups of the Department comprise specialists in Physics, Chemistry, Biology, Mathematics and Environmental Education In spite of the diversity of the department faculty in training, inclination and aptitude, it is able to take a synoptic stance while working in different areas stated above

The Department undertakes curriculum development in science and mathematics education of all school stages especially from the upper primary to the senior secondary stage Elements of environmental education and other aspects relevant to school education are woven through the entire curriculum.

Dissemination of information in Science, Mathematics and Environmental Education through the Instructional Material Centre of this Department and through the organization of various activities like seminars, exhibitions, science club and Science Park activities and the journal of "School Science' is another significant area of department's work

The Department also assists and advises the Ministry of Human Resource Development, Government of India and helps other constituents of the NCERT in matters related to Science, Mathematics and Environmental Education

In order to strengthen Science and Mathematics in school, the major activities include teacher orientation programmes, development of popular science materials, innovative laboratory practices in science and mathematics and organization of out-of-school activities in Science and dissemination of innovations in Science The Department also organizes every year the Jawaharlal Nehru National Science Exhibition for Children which is culmination of a series of science exhibitions organized at district, zonal and state levels

In a nutshell, following are the areas in which the department has concentrated its efforts

- Development of the next generation of curriculum and curricular materials in Science and Mathematics on the basis of the collected feedback and contemporary changes in the field of science, mathematics and technology
- Development of innovative experiments and activities using low-cost locally available materials and environment as resource

- Development of Laboratory curriculum with emphasis on problem-solving abilities.
- Development of support materials, both print and non-print for the education of special groups-low achievers and high achievers
- Development of multi-media teacher training packages
- Training of teachers in Science and Mathematics
- Training of resource/key persons specially on laboratory experiments and activities and training of curriculum developers in environmental education.
- Nurturance of talented/creative students through special programmes and development of necessary materials.
- Promotion of out-of-school activities
- Popularisation of Science and Mathematics
- Research related to curriculum designs, curriculum transaction and its impact.
- Research related to development of experimental skills
- Research related to development and fabrication of science equipment and science kits for primary and upper primary stages
- Issues and problems of development of proto-type curricular materials in science and mathematics for learners and teachers

A lot of thinking has gone to the formulation of programme proposals for 2003-2004 which includes the recommendations of various committees, the revised National Policy on

Education-1992 the Programme of Action 1992, National Curriculum Framework for School Education-2000 and advice of the Director, NCERT to the Department from time to time

RESUME OF ACTIVITIES OF THE PROGRAMME UNDERTAKEN DURING THE LAST FIVE YEARS

- Department reviewed the textual materials and received feedback about the textbook already in vogue. Minor revision of the textbooks was done with a view to make them free from conceptual errors Major revision in one or two cases were also done with a view to accommodate changes in approach and philosophy of the subject concerned
- Department developed Hindi version of the Science and Mathematics textbooks for stages starting from upper primary to senior secondary stages. Nearly all the books (including Hindi version) are available for their uses in school system.
- Department developed instructional materials to supplement the textbooks such as Problem Books in Mathematics for upper primary and secondary stages, teacher-support materials, teaching aids such as low-cost 3-dimensional Model in Chemistry etc
- Laboratory programmes were initiated and laboratory manuals for senior secondary stage were developed in Physics, Chemistry and Biology Department undertook the revision of Physics Practical at Senior Secondary Stage and for such programmes, major emphasis was laid for laboratory skills Materials on Chemistry laboratory skills were also developed. Guidelines for Physics Practical were developed: and concept based experiments in Chemistry were designed and tried out
- Mathematics Laboratory was given a shape Mathematics Laboratory broadly covers all stages starting from upper primary to senior secondary stage. Laboratory manuals in Chemistry and Biology were developed for senior secondary stage
- Teacher training materials were developed in Chemistry and Physics areas Department undertook the training programmes of the teachers from Navodaya Vidyalayas, Kendriya Vidyalayas, Central Tibetan School and of the teachers from Ladakh (Leh). In these training programmes, nearly 500 teachers were trained in science and mathematics The teachers who were trained were either newly appointed or were promoted from TGT to PGT position and needed training on priority basis

Department promoted out-of-school activities as its regular programme and organised State Level and National Level Science Exhibitions During the last five years, efforts were made to improve the quality of exhibits by providing suitable inputs of academic nature Jawaharlal Nehru National Science Exhibition for Children (JNNSEC) is a prestigious programme of the Department Exhibits are received at National Level after their screening at the state level An effort has been made to make the "School Science" quarterly journal up to date and Department succeeded in its efforts. Presently, School Science quarterly Journal is published regularly This journal is basically meant to disseminate innovative practices in Science, Mathematics and Technology up to students and teachers.

Nearly 26 Science books have been developed and printed during the last five years under the project "Reading to Learn" By this time, more than 45 books have been developed in toto. Senior scientists of the country are associated with this the development of these books.

Some conceptual materials for promotion of Environmental Education as an integral part of curriculum have been developed. Department also undertook orientation programmes of experts associated with development of curriculum at Secondary and Senior Secondary levels and a long term plan for promotion of environmental education as an integral part of curriculum, has been drawn

Department undertook the MHRD Project for Developing Modular Training Materials for use of DIETs personnel for Environmental Orientation to School Education in collaboration with KIEs. Four sets of Modular Materials have been printed and disseminated.

For the last three years, department remains deeply involved in development of curriculum and new generation of textual and other related instructional materials. Syllabi of upper rimary, secondary and higher secondary stages in science and mathematics have been eveloped. Department developed textbooks for VI, IX and XI classes in science and athematics during 2001-02 (in English and Hindi both) and completed the books for classes II, X and XII in Science and Mathematics during 2002. Both versions (English and Hindi) f these textbooks are expected to available to students before the commencement of the new ademic session (2003-04).

ESM faculty (in Science and Mathematics) offered consultancy to institutions like SCERTs, oards of School Education, Indira Gandhi National Open University (IGNOU), National stitute of Open Schooling,, CBSE, KVS and to many other academic institutions and ovided resource persons in the programmes organized by these institutions.

he Department produced a document in the form of two charts showing contribution of the CERT towards science education in India chronologically since its inception (1963). This as presented at t he Conference of the INSA (Indian National Science Academy) in May 002 for inclusion in the recorded history of development of science education in the country.

n the lines of new National Curriculum Framework for School Education-2000 developed y the NCERT, the Department is engaged in bringing out a document how to integrate ience with technology in the new generation of Science and Technology Textbooks introduced by the NCERT in collaboration with IIT, DST, NCSM and similar other institutions

he Department is also engaged in developing modules on virtual laboratory, which are interactive and extremely useful for the students and teachers particularly in the schools here laboratory facilities are not sufficient

n instructional approach based on new trends in science educational research has been leveloped and tried out at senior secondary level Multi-media packages in Chemistry for lass XI on a few hard spots are being developed to supplement the Chemistry textbook.

RESUME OF WORK OF THE DEPARTMENTAL PROGRAMME UNDERTAKEN DURING 2002-2003(Upto 1st February, 2003)

1. **Development of Textual Materials in Science and Technology for Upper Primary Stage**

   Science and Technology textbook for class VII was developed and submitted to Publication Department for printing The textbook is expected to be available for children by first week of March, 2003

2. **Development of Textual Materials in Mathematics for Upper Primary Stage**

   Mathematics textbook for class VII was developed and submitted to Publication Department for printing The textbook is expected to be available for children by first week of March, 2003

3. **Development of Textual Materials in Science and Technology for the Secondary Stage**

   Science and Technology textbook for class X was developed and submitted to Publication Department for printing The textbook is expected to be available for children by first week of March, 2003

4. **Development of Textual Materials in Mathematics for Secondary Stage**

   Mathematics textbook for class X was developed and submitted to Publication Department for printing. The textbook is expected to be available for children by first week of March, 2003

5. **Development of Textual Materials in Physics for Higher Secondary Stage**

   Physics textbook for class XII was developed and submitted to Publication Department for printing. The textbook is expected to be available for children by first week of March, 2003

6. **Development of Textual Materials in Chemistry for Higher Secondary Stage**

   Chemistry textbook for class XII was developed and submitted to Publication Department for printing. The textbook is expected to be available for children by first week of March, 2003

7. **Development of Textual Materials in Mathematics for Higher Secondary Stage**

Mathematics textbook for class XII was developed and submitted to Publication Department for printing. The textbook is expected to be available for children by first week of March, 2003

8. **Development of Textual Materials in Biology for Higher Secondary Stage**

Biology textbook for class II was developed and submitted to Publication Department for printing The textbook is expected to be available for children by first week of March, 2003

9. **Development of Books in New and Applied Areas of Science under the Project 'Reading to Learn'**

Three manuscripts under this project are developed (i) Rooi Se Nylon Tak (ii) Earthquake and (iii) Bhojpatra Se Adhunik Kagaj Tak

10. **Multimedia package for interactive learning of Chemistry for Class XI and XII**

Production script for Multimedia package in Chemistry for Class XI on (i) atomic structure, (ii) periodicity, and (iii) chemical bonding has been developed and production of software is in progress.

11. **Development of Technology Component of textual material for (a) Upper Primary (b) Secondary level as per new syllabus of Science and Technology**

A workshop was conducted and a document has been prepared and circulated

12. **Development of (a) Low-cost equipment (b) Virtual experiments (c) Real Time Measurement for the secondary level as per new syllabus of S&T**

Two Modules of virtual laboratory have been developed They are now ready for field testing.

13. **Development of Laboratory Manual in Science and Technology for Secondary Stage**

The write-up of the experiments for the laboratory manual in Science and Technology for secondary stage is already developed and will be reviewed and finalized in the workshop to be held from 17-21 February, 2003

14. Centre for Popularisation of Science

Civil work for the Science Park was completed 17 models have been fixed in the 'Science Park'. Action for procuring/fabricating a few more models is in progress. School children from a few schools visited the Science Park during December 2002-January 2003 apart from teacher trainee students of DIET from other States.

Order for Solar Energy devices against the grant provided by Ministry of Non-Conventional Energy Sources has been placed Some of the items have been received Civil work for 'Science Activity Room' has been completed. Furnishing of the same is to be taken up

15. State Level Science Exhibition for Children 2001-2002

States were provided academic guidance in the form of main theme and sub-themes, criteria for evaluating the exhibits and financial support.

16. Jawaharlal Nehru National Science Exhibition for Children

The Jawaharlal Nehru National Science Exhibition for Children was held at Hyderabad from 26th November to 1st December, 2002. Report is under preparation.

17. 'School Science' – A Quarterly Journal

The March and June, 2002 issues have been published. The manuscript for September, 2002 issue has been sent to Publication Department for printing. The manuscript for December, 2002 issue of the Journal is under preparation.

18. Documentation and analysis of Science Exhibits during three decades of the National Science Exhibition organized by NCERT

Data-base of 1715 Science Exhibits (1992-2002) is ready. Document is in draft stage

19. Apprenticeship Training

A fresh batch of 8 ex-ITI students engaged as apprentices in 7 different trades are undergoing training and their term of training will be completed by the end of this financial year

20. Batch Production of Science Kits

The left over 236 ISK of the on-going project of the 650 ISK was undertaken and the same is continuing.

ACADEMIC ACHIEVEMENTS OF THE DEPARTMENT DURING THE PERIOD APRIL 2002 TO JANUARY 2003

Immediately after the release of 'Curriculum Framework for School Education 2000, DESM started the work of developing curriculum and new generational of textual materials. Syllabi developed in 'Science and technology' and mathematics for upper primary and secondary stages and in physics, chemistry, biology and mathematics for higher secondary stages were re-examined and deliberated involving practicing teachers, representatives of various Boards, KVS, NVS and subject experts by different writing teams constituted for different stages of school education. Syllabi were finalized before starting the writing of the textbooks Eight writing teams of authors which are entrusted the responsibility of developing textbooks in science and mathematics, started writing of textbooks with effect from May, 2001

In the first phase, manuscripts for Classes VI, IX and XI were developed and submitt4ed for publication All books are available for children Second phase of the development of textbook started w e f April, 2002. Textbooks for classes VII, X for Science and Mathematics and for classes XII in Physics, Chemistry, Biology and Mathematics were developed English versions of all these books were submitted by 15th December 2002 Hindi versions of these books were also developed and edited and submitted by 15th January 2003 In all these books, teachers, subject experts, teacher educators participated in a big way

Department developed three books under the Project, 'Reading to Learn' Four modules in Environmental Education published last year were disseminated to different Govt. departments These modules were also sent to DIETs for training of teachers in Environmental Education

Department organised 29th Jawaharlal Nehru National Science Exhibition for Children at Hyderabad in collaboration with A P Government from 26th November to 1st December, 2002 and provided academic guidance along with catalytic grants to different States in the country to organize State Level Science Exhibition on the themes and sub-themes already supplied to them by this department Department initiated the work for establishing a centre for popularising science among children and by this time it has developed seventeen models Hopefully, project will take a good shape when 'Energy Park' will also be added to it before the March, 2003

'School Science' journal is another important forum for dissemination of innovations in the field of science, mathematics, Environment and technology All the issues of this journal are being published timely

In brief, all the projects undertaken by the Department during 2002-2003 are going on as per schedule and will be completed by March 2002

SUMMARY STATEMENT OF THE PROGRAMME PROPOSALS FOR 2003-04

Sr. No	Title of the Programme	Name of the Coordinator	Type of the Programme	Category	Budget Estimate (Rs.)	Recommendation of DAB
1	Identification of Technology Innovations and Applications for Front-line curriculum for S&T (up to secondary level)	Prof P K Bhattacharyya	Research	New	84,000/-	Recommended
2	In-depth study of Science & Technology curriculum for higher secondary stage	Dr. Dinesh Kumar	Research-cum-Development	New	4,62,000/-	-do-
3	In-depth study of Mathematics curriculum for secondary stage	Dr Ram Avtar	-do-	New	4,42,000/-	-do-
4	In-depth study of physics curriculum for higher secondary stage	Dr V P Srivastava	-do-	New	4,42,000/-	-do-
5.	In-depth study of Chemistry curriculum for higher secondary stage	Prof Brahm Parkash	-do-	New	4,42,000/-	-do-
6	In-depth study of Biology curriculum for higher secondary stage	Prof J S Gill	-do-	New	4,42,000/-	-do-
7	In-depth study of Mathematics curriculum for higher secondary stage	Dr V P Singh	-do-	New	4,42,000/-	-do-
8	Identification and development of skills for bringing Innovation in science practicals at secondary and higher secondary level	Prof. R D Shukla	-d0-	New	3,68,400/-	-do-
9.	Linking Mathematics education with life skills as Identified in National Curriculum Framework-2000	Prof. Surja Kumari	-do-	New	2,40,000/-	-do-
10	Development of Laboratory Manual in Physics for higher secondary stage	Prof B K.Sharma	Development	New	5,97,000/-	-do-
11	Development of Laboratory Manual of Biology for higher secondary stage	Dr Dinesh Kumar	Development	New	4,48,440/-	-do-
12	Development of Laboratory manual in Chemistry for higher secondary stage	Prof. I.P Aggarwal	Development	New	3,87,260/-	-do-
13	Development of teachers handbook for designing mathematics laboratory in schools	Prof Hukum Singh	-do-	New	1,40,000/-	-do-
14.	Development of textbook in Science and Technology for upper primary stage (Class-VIII) (English & Hindi)	Dr K.M.Pant	-do-	New	6,74,000/-	-do-

15.	Development of textbook in Mathematics for upper primary stage (Class-VIII) (English & Hindi)	Sh Mahendra Shanker	-do-	New	5,80,000/-	Recommended
16	Teacher's handbook on Integration of S&T at the upper primary stage	Prof P K Bhattacharyya	-do-	New	69,000/-	-do-
17.	Assessment of laboratory requirements for carrying out practicals in Science and Technology at secondary stage	Dr. Anjni Koul	-do-	New	19,520/-	-do-
18.	Development of a Source Book for out-of-school S&T activities	Prof. P.K Bhattacharyya	-do-	New	75,000/-	-do-
19	Try-out, modification and dissemination of already developed Multimedia Package in chemistry for class XI	Prof. H O Gupta	-do-	On-going	2,88,000/-	-do-
20	Development of (a) Virtual Experiment; And (b) Real Time Measurement	Prof P K Bhattacharyya	-do-	On-going	1,53,000/-	-do-
21.	Centre for Popularisation of Science	Sh R Joshi	-do-	On-going	2,57,800/-	-do-
22	Design and development of Science and Technology Kit for upper primary stage	Prof H O Gupta	-do-	New	3,30,000/-	-do-
23	Development of books in new and applied areas of Science under the project "Reading to Learn"	Prof R D Shukla	-do-	On-going	1,74,520/-	-do-
24.	Integration of Disaster Management and Mitigation into NCERT curricula	Prof J S Gill	-do-	New	2,22,800/-	-do-
25	Orientation of KRPs (PGTs) in Biology for higher secondary classes	Prof S C Jain	Training	New	6,55,200/-	-do-
26.	Training of resource persons/teachers in Chemistry at the higher secondary stage	Prof. I.P. Aggarwal	-do-	New	7,58,600/-	-do-
27.	Training of resource persons/teachers in Physics at the higher secondary stage	Dr Gagan Gupta	-do-	New	9,31,400/-	-do-
28	Apprenticeship Training	Sh Abu Bhasar	-do-	On-going	1,50,000/-	-do-
29.	Production of Science Kits	-do-	Extension	-do-	1,50,000/-	-do-
30	'School Science' – A Quarterly Journal	Shri R Joshi	-do-	-do-	20,000/-	-do-
31.	National Seminar on NCERT and States curricula in Science and Mathematics education	Prof R D Shukla	-do-	New	3,02,400/-	-do-
32	State Level Science Exhibition for Children 2003-04	Dr K M Pant	-do-	On going	26,59,000/-	-do-
33	Jawaharlal Nehru National Science Exhibition for Children 2003-04	Prof K B. Gupta	-do-	-do-	22,50,000/-	-do-
	Total:				1,56,84,340/-	

DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS

Composite Statement of Programmes Proposed for 2003-2004

I. Type/Category wise number of Programmes with proposed budget

Programme	New	On going	Carried over	Total	Budget Proposed
Research	84,000/-	-	-	84,000/-	84,000/-
Research-cum-Development	32,80,400/-			32,80,400/-	32,80,400/-
Development	38,31,020/-	5,85,320/-		44,16,340/-	44,16,340/-
Training	24,95,200/-			24,95,200/-	24,95,200/-
Extension	3,02,400/-	50,79,000/-		53,81,400/-	53,81,400/-
Any other					
				Total· Rs	1,56,57,340/-

II (A) Source-wise break-up of the total proposed budget in I

(i) Estimated Budget from Councils funds Rs 1,56,57,340/-
(ii) Specific Grants from MHRD Nil
(iii) Grants received from other agencies like UNICEF ect Rs Nil

(B) Budget proposed vis-à-vis utilization thereof during 2002-2003 under Plan programmes.

(i) Budget asked for 2002-2003 as per PAC agenda (March 2002
Rs. 1,10,76,060/-
(ii) Budget allocated by PPMED for 2002-2003 Rs. 63,00,000/-
(iii) Specific grant received from MHRD for 2002-2003 Rs Nil
(iv) Expenditure incurred on programmes under B (ii) above Rs 88,00,000/-
(as on 31.12.2002)

III Details of Specific Programmes

Programmes for	No of Programmes	Programmes Codes	Budget Proposed Rs
North-East Region	-	-	-
SC/ST	-	-	-

IV Proposed Supporting Staff (JPF/CA) -

18. Prof. J.S. Gill
19. Prof. B K. Sharma
20. Prof. Brahm Prakash
21. Prof. H.O. Gupta
22. Prof. S.C. Jain
23. Dr. K.M. Pant
24. Dr. Ram Avtar
25. Dr. V.P. Singh
26. Dr. V.P. Srivastava
27. Dr. Dinesh Kumar
28. Dr. Gagan Gupta
29. Sh. Mahendra Shankar
30. Shri R Joshi
31. Dr. Jitendra Singh
32. Dr. Anjni Koul
33 Shri Abu Bashar

Prof. M.P. Singh (External Member) and Prof. (Smt) Surja Kumari could not attend the meeting.

Prof. R.D. Shukla, Head of the Department of Education in Science and Mathematics, welcomed the external members of the newly constituted DAB, as well as the members representing other Departments of the NIE and the NCERT. After a brief introduction of the members present, Prof. Shukla acquainted the members about the role and functions of the Department, presented activity completion report for year 2002-03 and the recommendations of the DAB. He also apprised the members about the academic achievements of the department during 2002-03. It was followed with the presentation of a summary of the programmes proposed by the Department for the year 2003-04.

1 All the programmes proposed by the DESM for the year 2003-04 were approved after a comprehensive discussion

2. The following suggestions/recommendations were made by the DAB for the consideration of the department

(i) Dr. Verma and Prof. Suresh Chandra observed that younger generation is not opting to science as a career although they may be studying science. It was recommended that some scheme/programmes be formulated by the NCERT which may help in reversing this trend.

(ii) The NCERT may consider to undertake a study to find out the factors/reasons for science not being accepted as a career by students.

3. (a) Commending the achievement of the DESM in bringing out excellent textbooks in science and technology and mathematics for the various classes, Prof. Suresh Chandra, Prof. Jain and other members
suggested that

(i) the NCERT should bring out a single hardbound international editions of textbooks in Physics, Chemistry, Biology and Mathematics by combining the textbooks for classes XI and XII, published in 2002 and 2003.

(ii) the NCERT should constitute a committee of experts to review the new textbooks for classes XI and XII and suggest modifications, if required, to bring out their international editions.

(b) Dr. Verma specially commended the efforts of the Department in bringing out supplementary books in science in Hindi under the project 'Reading to Learn'. He suggested that this project may be continued.

4. Dr. Verma, Prof. Man Mohan Singh, Prof. Jain and Prof. Suresh Chandra suggested that the following aspects may be considered while developing laboratory manuals in different disciplines of science:

(a) Experiments should be relevant to theory/life.

(b) Experiments should emphasise on modern techniques like microanalysis of salts in Chemistry and real time measurements through sensors.

(c) Identify laboratory skills that may be commensurate with those required at the frontiers of research and/or by the industry. If desirable, some of the traditional laboratory excercises emphasizing on obsolete laboratory skills which are no more relevant may be discarded

5. The NCERT should consider developing a manual for students/teachers on safety measures and safety precautions to be observed while working in a laboratory and also develop designs for school science laboratories incorporating all safety norms.

6. Prof. Suresh Chandra and Prof. Jain drew attention to the fact that the new generation of textbooks emphasise on a holistic view of physical, chemical and biological phenomena cutting across the boundaries of traditional disciplines – physics, chemistry and biology. In order to help the teachers to appreciate the unification of concepts pertaining to different disciplines, the NCERT should develop a module highlighting this aspect, which may be used for teacher training and distribution to the teachers.

7. Prof. Man Mohan Singh drew attention of the house on the plight of transaction of science and mathematics including laboratory exercises in schools in North-Eastern states of the country. He suggested that a separate training programme may be organised by the Department for the in-service training of teachers/resource persons of the North-Eastern States.

8. Establishment of 'Science Park' and other programmes proposed for the popularization of science were appreciated. However,

   (i) it was suggested that the DESM should seek collaboration of the NCSM and its 'Science Centre' in further improvement/addition of interactive models on the one hand and encourage schools to visit Science Park/Science Centres on the other;

   (ii) the NCERT should consider developing a network of institutes/organizations engaged in the popularization of science in schools both at Governmental and non-governmental levels.

9. It was suggested that a Mega Project on the science practicals in schools for the secondary and higher secondary stages may be undertaken by the Department.

10. It was suggested while the Workshop Section of the Department should continue to upgrade existing science kits and produce them to meet the demand, it should consider to develop another variant of science kits that may include even expensive laboratory equipment to cater to the needs of the schools which can afford them.

11. In view of the facilities and expertise available with the Workshop Section on plastics technology, it was suggested that in addition to apprentice training of 9 technicians, the Workshop should also prepare the design for a short-term (3-6 months) training programme on the plastics moulding technology. Efforts should be made to make such training programme financially viable and self-supporting.

12. It was observed that in the absence of access to latest developments in Science and Technology as also availability of lack of expert advise on content and processes of science and technology, school teachers as well as students often feel frustrated in their efforts to improve quality of instructions in schools. NCERT may, therefore, consider to create a certain number of 'National Chair of Science Advisors to Schools'. The adviser may be appointed from amongst working/retired scientists/professors from universities or national research organizations, such as, ISRO, BARC, TIFR, NPL, DST and other national laboratories and the NCERT. An adviser appointed to the proposed 'National Chair' may look after a cluster of schools in a given area/region.

13. It was suggested that the Council should make efforts to utilize its Web pages for receiving feedback on its textbooks as also to enhance interaction with students and teachers

The meeting ended with a vote of thanks to the Chairman.

PROGRAMME PROPOSALS FOR 2003-2004

Abstract

1. Title:

Identification of Technological Innovations and Applications for Front Line Curriculum of S&T (up to secondary level)

2. Specific Objectives:

With the explosion of technological innovations, an appropriate slot for their induction in Front Line Curriculum has to be made so that children are able to appreciate and use technology in everyday life. The outcome of the project will be utilised in the next edition of NCERT Science Textbooks

3. Methodology :

a) About 200 practising teachers will be given research questions about technology in front line curriculum and its transaction (Govt Schools, KVS, Public Schools, model schools)
b) Responses will be processed applying statistical tools
c) Technology spiral in the curriculum will be established in the areas of Agriculture – Food-Dairy-Biotechnology, Public Health - Medical, Construction (Civil - Mech – Electrical), Energy, ICT-Space Technology.

4. Plans for Utilising the Outcome:

A document will be compiled for dissemination and guidance to school curriculum developers in S&T

PROFORMA FOR PROGRAMME PROPOSALS FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**		**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**		Identification of Technology Innovations and Applications for Front Line Curriculum of S&T (upto secondary level).
3.	**(a) Type of the Programme (Please tick)** **(b) Category of the Programme** **(c) If the Programme is carried over, mention the present PAC Code No.**		Research New N A
4.	**Total Duration of the Programme As phased in Column 10 (months)**		24 months
	(a) Date on which programme commenced		April 2003
	(b) Target Date of completion		March 2005.
5.	**(a) Stage of Education to which the programme is meant**		Upper Primary to Secondary
	(b) If the Programme is meant for a group with special needs		N.A.
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency		N.A.
6.	**Beneficiaries**		Curriculum Developers, Teacher Educators, Teachers, Students

7. **Need and justification on:**
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

'Science' is now 'Science & Technology' as per NCF 2000 Scientific principles remaining in their places, there is explosion of technological innovations some of which are to be taken in the fold of front line curriculum continuously

8. (a) Specific Objectives:

With the explosion of technological innovations, an appropriate slot for their incorporation in front line curriculum has to be made so that children are able to appreciate and use technology in everyday life The outcome of the project will be utilised in the next edition of NCERT Science Textbooks

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Main tasks involved in executing the project are ·

i) About 200 practicing teachers will be given research questions about technology in front line curriculum and its transaction (Govt. Schools, KVS, Public Schools, Model Schools)

ii) Responses will be processed applying statistical tools

iii) Technological spiral in the curriculum will be established in the area of Agriculture-Food-Dairy-Biotechnology, Public Health-Medical, Construction (Civil-Mech. - Electrical), Energy, ICT - Space Technology.

(c) Proposed Supporting Staff / (JPF/CA), if any. One CA

9.	**Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
	(a) NCERT Constituents	RIE's	Feedback from Teachers
	(b) Outside Agency	Scientists of CSIR, ISRO, IITS, DST, etc	To know new innovations in different categories.

10. Phasing of the Programme with precise information on Activities (including inhouse-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	Activities proposed to be organised	Proposed dates From		Estimated Expenditure (If any)
		From	To	
1.	2.	3.	4.	5.
1	In-house activities		Upto July 2003	
2	Conference with presentation of papers(with agencies at 9)	2 days in August-2003		57,000/-
3	JPF for 6 months			27,000/-
			Total	84,000/-

11 Details of each Budget activity under Item No. 10 (in the following format)

11.1 Activity No.: 10.2
Title: Conference with presentation of papers
Proposed Duration: August 2003 (2 days)

Sl. No	Item of Expenditure	Estimated Expenditure	Remarks, If any
1.	TA to 12 participants	40,000/-	
2.	DA to participants (260x12x2)	6,240/-	
3.	Contingency (Working lunch, tea/coffee etc)	10,760/-	
	Total	57,000/-	

12. Expected end-product

(a) Guidelines on areas of technology to be incorporated in S&T Textbooks (next edition)
(b) Identification of technology spiral in S&T curriculum

13. (a) Plan for utilization and dissemination of end-product(s)

A document will be compiled for dissemination and guidance to curriculum.

(b) Plans for Evaluation of the outcome

Formative evaluation will be built in.

(c) Plants for Follow up/Feedback on utilization of the outcome

Feedback/Follow-up will be taken up subsequently once the document reaches the users

14. Personnel Involved

14.1 Name and Designation of Programme Coordinator

Dr. P K. BHATTACHARYYA, Professor

14.2 Other Faculty Members

1. Prof. R.D. Shukla
2. Prof. Brahm Prakash .
3. Shri R. Joshi

Signature
Programme Coordinator
Date 18/02/03

Signature
Head of the Department
Date: 18/02/03

Date: **Date:**

Abstract

1. **Title of the Project:**

   In-depth study of Science & Technology curriculum for Secondary Stage

2. **Specific Objectives:**

   (i) To carry out an in-depth study of the textbook from the perspective of quality and curriculum load

   (ii) To develop specific guidelines for further improvement of the book.

3. **Methodology:**

   (i)To develop tools for in-depth study

   (ii)To try-out the book in experimental schools located in different regions of the country.

   (iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators

   (iv)To analyse the responses and evolve specific guidelines for improvement of the book.

   (v) In the year 2003-04, the study will be confined to class IX curriculum. In the year 2004-05, the study will be conducted for class X curriculum.

4. **Plans for utilisingthe outcome:**

   Results of the study will be used for improvement of Science & Technology Textbooks for secondary stage.

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent**	DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS
2.	**Title of the Programme**	In-depth study of Science & Technology curriculum for Secondary Stage
3.	**(a)Type of the Programme**	Research and Development
	(b)Category of the Programme	New
	© If the Programme is carried over, mention the present PAC Code No.	
4.	**Total Duration of the Programme As phased in Column 10 (months)**	24 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2005
5.	**(a) Stage of Education to which the Programme is meant**	Secondary Stage
	(b) If the Programme is meant for a group with special needs	-
	© If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	-
6.	**Beneficiaries**	Students/Teachers/Teacher educators

7. **Need and justification:**

(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The textbook of Science & Technology for Class IX has been developed based on National Curriculum Framework for School Education-2000. The book has been in use since the academic session 2002. As curriculum development is a dynamic process, it is necessary to carry out an in-depth study of curriculum in different types of schools located in different regions of the country to know the perception of students, teachers and teacher educators about the quality of the book and the curriculum load. Based on the feedback, specific guidelines will be evolved for further improvement of the book. A similar study will be carried out in the year 2004-05 for Class X curriculun

8. (a) **Specific Objectives:**

(i)To carry out an in-depth study of the textbook from the perspective of quality and curriculum load

(ii) To develop specific guidelines for further improvement of the book.

(b) **Methodology :**
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

(i) To develop tools for try-out

(ii)To try-out the book in experimental schools located in different regions of the country.

(iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators

(iv)To analyse the responses and evolve specific guidelines for improvement of the book

9.Colaborating Agencies, if any	**Name of agency**	**Nature of Collaboration**
3. NCERT Constituents	RIEs	Academic
(b) Outside agency	KVS, NVS, Govt. Schools and other agencies using NCERT books, colleges and universitie	

10. Phasing of the Programme with precise information on Activities (including in-house activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organised	Proposed dates From	To	Estimated Expenditure
1	2	3	4	5
1.	Identification of five nodal agencies (region wise) and experimental schools	April 2003	June 2003	In-house
2.	Development of tools	April 2003	May 2003	In-house
3	Finalization of tools and planning to administer the tools	June 2003	July 2003	86,000/-
4	Regional meetings with teachers of experimental schools (one in each region and one in Delhi) (two days)	July 2003	August 2003	98,000/-
5	Tryout of textbooks in schools	August 2003	December 2003	75,000/-
6.	Collection and analysis of responses	December 2003	February 2004	In-house
7.	Finalization of responses and development of specific guidelines	February 2004	March 2004	1,80,000/-
8	Preparation of report	March 2004	-	3,000/-
	SubTotal·			4,42,000/-
9	Estimated expenditure for 2004-05			4,42,000/-
10.	Grand Total			8,84,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1	**Activity No.:**	10 3
	Title:	Finalization of tools and planning for its administration
	Proposed Dates:	June-July, 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1	T A for 8 non local participants	60,000/-	-
2	DA for 8 non local participants (260×8×3)	6,240/-	-
3	Local Conveyance for 4 participants (260×4×3)	3,120/-	-
4	Honorarium for 12 participants(200×12×3)	7,200/-	-
5	Contingency	9,440/-	-
	Total	86,000/-	

11.2 Activity No.: 10.4
Title: Regional Meeting with teachers of experimental schools
Proposed Duration: July-August 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T.A. for 11 teachers	5,500/-	
2.	DA for 10 persons	4,000/-	
3.	Honorarium for local Programme Director	400/	
4.	Contingency including postage of filled-in questionnaires)	3,100/-	
	Total	13,000/-	

Expenditure for 6 regional meetings = 13,000 × 6 = 78,000/-
TA/DA for visits of DESM faculty = 20,000/-
Total = 98,000/-

11.3 Activity No.: 10.5
Title: Tryout of textbook in schools
Proposed Duration: August-December, 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T.A./D.A. Conveyance charges for three visits of 5 nodal persons to 10 experimental schools in each region @ Rs 500/- per visit per school (500× 5×10×3)	75,000/-	
	Total	75,000/-	

11.4Activity No.: 10 7
Title: Finalization of inputs and development of specific guidelines in a workshop
Proposed Duration: February-March 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	**2.**	**3.**	**4.**
1.	T.A. for 15 non-local participants	1,20,000/-	
2.	DA for 15 non-local participants (260×15×5)	19,500/-	
3.	Local Conveyance for 5 persons (260×5×5)	6,500/-	
4.	Honorarium of r 20 participants (200×20×5)	20,000/-	
5	Contingency	14,000/-	
	Total	1,80,000/-	

12. Expected end–product

A report of in-depth study of Science & Technology curriculum for secondary stage will be brought out. A consolidated report will be brought out at the end of second phase of th programme.

13. (a) Plans for utilization and dissemination of the end product (s)

Results of the study will be used for improvement of Science & Technology textbook

(b) Plans for Evaluation of the outcome

-

(c) Plans for follow up/feedback on utilization of the outcome

-

16. Personnels Involved

a. Name and designation of the Programme Coordinator

Dr. Dinesh Kumar, Reader

b. Name of designation of the Associated Faculty

a Prof. Brahm Parkash
b Prof J S Gill
c. Prof K.B Gupta
d. Prof B K Sharma
e Dr Gagan Gupta, Reader
f. Dr Anjni Koul, Lecturer

Dinesh Kumar
18 2 03
Signature
(Programme Coordinator)
Date:

Signature
(Head of the Department)
Date: 18\02\03

Abstract

1. **Title of the Project:**

In-depth study of Mathematics curriculum for Secondary Stage

2. **Specific Objectives:**

(i)To carry out an in-depth study of the textbook from the perspective of quality and curriculum load

(ii) To develop specific guidelines for further improvement of the book.

3. **Methodology:**

(i)To develop tools for in-depth study.

(ii)To try-out the book in experimental schools located in different regions of the country.

(iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators

(iv)To analyse the responses and evolve specific guidelines for improvement of the book

(v) In the year 2003-04, the study will be confined to class IX curriculum. In the year 2004-05, the study will be conducted for class X curriculum.

4. **Plans for utilisingthe outcome:**

Results of the study will be used for improvement of Mathematics textbooks for secondary stage

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent**	DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS
2.	**Title of the Programme**	In-depth study of Mathematics Text Book for Secondary Stage
3.	**(a)Type of the Programme**	Research and Development
	(b)Category of the Programme	New
	© If the Programme is carried over, mention the present PAC Code No.	
4.	**Total Duration of the Programme As phased in Column 10 (months)**	24 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2005
5.	**(a) Stage of Education to which the Programme is meant**	Secondary Stage
	(b) If the Programme is meant for a group with special needs	-
	© If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	-
6.	**Beneficiaries**	Students/Teachers/Teacher educators

7. Need and justification:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The textbook of Mathematics for Class IX has been developed based on National Curriculum Framework for School Education-2000. The book has been in use since the academic session 2002. As curriculum development is a dynamic process, it is necessary to carry out an in-depth study of curriculum in different types of schools located in different regions of the country to know the perception of students, teachers and teacher educators about the quality of the book and the curriculum load. Based on the feedback, specific guidelines will be evolved for further improvement of the book. A similar study will be carried out in the year 2004-05 for class X curriculum.

8. (a) Specific Objectives:

(i) To carry out and in-depth study of the textbook from the perspective of quality and curriculum load

(ii) To develop specific guidelines for further improvement of the book.

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

(i)To develop tools for try-out

(ii)To try-out the book in experimental schools located in different regions of the country.

(iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators

(iv)To analyse the responses and evolve specific guidelines for improvement of the book.

9.Colaborating Agencies, if any	**Name of agency**	**Nature of Collaboration**
2. **NCERT Constituents**	RIEs	Academic
(b) Outside agency	KVS NVS, Govt Schools and other agencies using NCERT books, colleges and universities.	

10. **Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)**

S. No.	Activities proposed to be organised	Proposed dates From	To	Estimated Expenditure
1	2	3	4	5
1.	Identification of five nodal agencies (region wise) and experimental schools	April 2003	June 2003	In-house
2.	Development of tools	April 2003	May 2003	In-house
3.	Finalization of tools and planning to administer the tools	June 2003	July 2003	86,000/-
4.	Regional meetings with teachers of experimental schools (one in each region and one in Delhi) (two days)	July 2003	August 2003	98,000/-
5.	Tryout of textbooks in schools	August 2003	December 2003	75,000/-
6.	Collection and analysis of responses	December 2003	February 2004	In-house
7.	Finalization of responses and development of specific guidelines	February 2004	March 2004	1,80,000/-
8.	Preparation of report	March 2004	-	3,000/-
	SubTotal:			4,42,000/-
9.	Estimated expenditure for 2004-05			4,42,000/-
10	Grand Total			8,84,000/-

11. **Details of each Budget Activity under item No. 10 (in the following format)**

11.1 **Activity No.:** 10.3
Title: Finalization of tools and planning for its administration
Proposed Dates: June-July, 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1.	T.A for 8 non local participants	60,000/-	-
2.	DA for 8 non local participants (260×8×3)	6,240/-	-
3	Local Conveyance for 4 participants (260×4×3)	3,120/-	-
4.	Honorarium for 12 participants(200×12×3)	7,200/-	-
5.	Contingency	9,440/-	-
	Total	86,000/-	

11.2 Activity No.: 10.4
Title: Regional Meeting with teachers of experimental schools
Proposed Duration: July-August 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	**2.**	**3.**	**4.**
1.	T.A. for 11 teachers	5,500/-	
2.	DA for 10 persons	4,000/-	
3.	Honorarium for local Programme Director	400/	
4	Contingency including postage of filled-in questionnaires)	3,100/-	
	Total	13,000/-	

Expenditure for 6 regional meetings = 13,000 × 6 = 78,000/-
TA/DA for visits of DESM faculty = 20,000/-
Total = 98,000/-

11.3 Activity No.: 10.5
Title: Tryout of textbook in schools
Proposed Duration: August-December, 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	**2.**	**3.**	**4.**
1.	T A./D.A Conveyance charges for three visits of 5 nodal persons to 10 experimental schools in each region @ Rs 500/- per visit per school (500× 5×10×3)	75,000/-	
	Total	75,000/-	

11.4 Activity No.: 10.7
Title: Finalization of inputs and development of specific guidelines in a workshop
Proposed Duration: February-March 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1	T.A for 15 non-local participants	1,20,000/-	
2.	DA for 15 non-local participants (260×15×5)	19,500/-	
3.	Local Conveyance for 5 persons (260×5×5)	6,500/-	
4	Honorarium of 20 participants (200×20×5)	20,000/-	
5.	Contingency	14,000/-	
	Total	1,80,000/-	

12. Expected end–product

A report of in-depth study of Mathematics curriculum for secondary stage will be brought out. A consolidated report will be brought out at the end of second phase of the programme.

13. (a) Plans for utilization and dissemination of the end product (s)

Results of the study will be used for improvement of Mathematics textbook

(b) Plans for Evaluation of the outcome

-

(c) Plans for follow up/feedback on utilization of the outcome

-

15. Personnels Involved

a. Name and designation of the Programme Coordinator

Dr. Ram Avtar, Reader

b. Name of designation of the Associated Faculty

a Prof. Hukum Singh
b. Dr V.P Singh, Reader

Signature
(Programme Coordinator)
Date: 17/02/03

Signature
(Head of the Department)
Date: 18/02/03

Abstract

1. **Title of the Project:**

   In-depth study of physics curriculum for higher secondary stage

2. **Specific Objectives:**

   (i) To carry-out an in-depth study of the textbook from the perspective of quality and curriculum load

   (ii) To develop specific guidelines for further improvement of the book.

3. **Methodology:**

   (i)To develop tools for in-depth study

   (ii)To try-out the book in experimental schools located in different regions of the country.

   (iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators

   (iv)To analyse the responses and evolve specific guidelines for improvement of the book.

   (v)In the year 2003-04 the study will be confined to Class XI curriculum. In the year 2004-05, the study will be conducted for class XII curriculum.

4. **Plans for utilising the outcome:**

   Results of the study will be used for improvement of physics textbooks for higher secondary stage

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent**	**DEPARTMENT OF EDUCATION SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	In-depth study of physics curriculum for higher secondary stage
3.	**(a)Type of the Programme**	Research and Development
	(b)Category of the Programme	New
	© If the Programme is carried over, mention the present PAC Code No.	
4.	**Total Duration of the Programme As phased in Column 10 (months)**	24 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2005
5.	**(a) Stage of Education to which the Programme is meant**	Higher Secondary
	(b) If the Programme is meant for a group with special needs	-
	© If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	-
6.	**Beneficiaries**	Students/Teachers/Teacher educators

7. Need and justification:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The textbook of Physics for Class XI has been developed based on National Curriculum Framework for School Education-2000. The book has been in use since the academic session 2002. As curriculum development is a dynamic process, it is necessary to carry out in-depth study of physics curriculum in different types of schools located in different regions of the country to know the perception of students, teachers and teacher educators about the quality of the book and the curriculum load. Based on the feedback, specific guidelines will be evolved for further improvement of the book. A similar study will be carried out in the year 2004-05 for class XII.

8. (a) Specific Objectives:

(i)To carry out an in-depth study of the textbook from the perspective of quality and curriculum load

(ii) To develop specific guidelines for further improvement of the book.

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

(i)To develop tools for try-out.

(ii)To try-out the book in experimental schools located in different regions of the country.

(iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators.

(iv)To analyse the responses and evolve specific guidelines for improvement of the book.

9.Colaborating Agencies, if any	**Name of agency**	**Nature of Collaboration**
(a) NCERT Constituents	RIEs	Academic
(b) Outside agency	KVS. NVS, Govt Schools and other agencies using NCERT books, Colleges and Universities.	

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organised	Proposed dates From	To	Estimated Expenditure
1	2	3	4	5
1	Identification of five nodal agencies (region-wise) and experimental schools	April 2003	June 2003	In-house
2.	Development of tools	April 2003	May 2003	In-house
3.	Finalization of tools and planning to administer the tools	June 2003	July 2003	86,000/-
4	Regional meetings with teachers of experimental schools (one in each region and one in Delhi) (two days)	July 2003	August 2003	98,000/-
5.	Tryout of textbooks in schools	August 2003	December 2003	75,000/-
6.	Collection and analysis of responses	December 2003	February 2004	In-house
7.	Finalization of responses and development of specific guidelines	February 2004	March 2004	1,80,000/-
8.	Preparation of report	March 2004	-	3,000/-
	Sub total for the year 2003-04			4,42,000/-
9	Estimated expenditure for 2004-05			4,42,000/-
10	Grand Total			8,84,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.3
Title: Finalization of tools and planning for its administration
Proposed Dates: June-July, 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1.	T A for 8 non local participants	60,000/-	-
2	DA for 8 non local participants (260×8×3)	6,240/-	-
3.	Local Conveyance for 4 participants (260×4×3)	3,120/-	-
4.	Honorarium for 12 participants(200×12×3)	7,200/-	-
5.	Contingency	9,440/-	-
	Total	86,000/-	

11.2 **Activity No.:** 10.4
Title: Regional Meeting with teachers of experimental schools
Proposed Duration: July-August 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T.A. for 11 teachers	5,500/-	
2.	DA for 10 persons	4,000/-	
3.	Honorarium for local Programme Director	400/	
4.	Contingency including postage of filled-in questionnaires)	3,100/-	
	Total	13,000/-	

Expenditure for 6 regional meetings = 13,000 × 6 = 78,000/-
TA/DA for visits of DESM faculty = 20,000/-
Total = 98,000/-

11.3 **Activity No.:** 10.5
Title: Tryout of textbook in schools
Proposed Duration: August-December, 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T A./D A. Conveyance charges for three visits of 5 nodal persons to 10 experimental schools in each region @ Rs.500/- per visit per school (500× 5×10×3)	75,000/-	
	Total	75,000/-	

11.4 Activity No.: 10 7
Title: Finalization of inputs and development of specific guidelines in a workshop
Proposed Duration: February-March 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	**2.**	**3.**	**4.**
1.	T.A. for 15 non-local participants	1,20,000/-	
2.	DA for 15 non-local participants (260×15×5)	19,500/-	
3.	Local Conveyance for 5 persons (260×5×5)	6,500/-	
4.	Honorarium of r 20 participants (200×20×5)	20,000/-	
5.	Contingency	14,000/-	
	Total	1,80,000/-	

12. Expected end–product

A report on an in-depth study of class XI Physics Curriculum will be brought out. A consolidated report will be brought out at the end of second phase of the programme

13. (a) Plans for utilization and dissemination of the end product (s)

Results of the study will be used for improvement of physics textbook

(b) Plans for Evaluation of the outcome

-

(c) Plans for follow up/feedback on utilization of the outcome

-

12. Personnels Involved

a. Name and designation of the Programme Coordinator

Dr. V P Srivastava, Reader

b. Name of designation of the Associated Faculty

1. Dr. B K Sharma, Professor
2. Dr. Gagan Gupta, Reader
3. Sh R Joshi, Lecturer (Sel Grade)

Signature
(Programme Coordinator)
18-2-03

Signature
(Head of the Department)
18/02/03

Abstract

1. **Title of the Project:**

   In-depth study of Chemistry curriculum for Higher Secondary Stage

2. **Specific Objectives:**

   (i) To carry out an in-depth study of the textbook from the perspective of quality and curriculum load

   (ii) To develop specific guidelines for further improvement of the book.

3. **Methodology:**

   (i)To develop tools for in-depth study.

   (ii)To try-out the book in experimental schools located in different regions of the country.

   (iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators

   (iv)To analyse the responses and evolve specific guidelines for improvement of the book

   (v)In the year 2003-04, the study will be confined to class XI curriculum. In the year 2004-05, the study will be conducted for class XI curriculum.

4. **Plans for utilisingthe outcome:**

   Results of the study will be used for improvement of Chemistry textbooks for Higher Secondary stage

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	In-depth study of Chemistry curriculum for Higher Secondary Stage
3.	**(a)Type of the Programme**	Research and Development
	(b)Category of the Programme	New
	© If the Programme is carried over, mention the present PAC Code No.	
4.	**Total Duration of the Programme As phased in Column 10 (months)**	12 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2005
5.	**(a) Stage of Education to which the Programme is meant**	Higher Secondary
	(b) If the Programme is meant for a group with special needs	-
	© If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	-
6.	**Beneficiaries**	Students/Teachers/Teacher educators

7. Need and justification:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The textbook of Chemistry for Class XI has been developed based on National Curriculum Framework for School Education-2000. The book has been in use since the academic session 2002. As curriculum development is a dynamic process, it is necessary to carry out an in-depth study of curriculum in different types of schools located in different regions of the country to know the perception of students, teachers and teacher educators about the quality of the book and the curriculum load. Based on the feedback, specific guidelines will be evolved for further improvement of the book. A similar study will be carried out in the year 2004-05 for class XII curriculum.

8. (a) Specific Objectives:

(i)To carry out an in-depth study of the textbook from the perspective of quality and curriculum load

(ii)To develop specific guidelines for further improvement of the book.

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

(i)To develop tools for try-out.

(ii)To try-out the book in experimental schools located in different regions of the country.

(iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators.

(iv)To analyse the responses and evolve specific guidelines for improvement of the book

9.Colaborating Agencies, if any	**Name of agency**	**Nature of Collaboration**
(d) NCERT Constituents	RIEs	Academic
(b) Outside agency	KVS NVS, Govt. Schools and other agencies using NCERT books, colleges and universities.	

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organised	Proposed dates		Estimated Expenditure
		From	To	
1	2	3	4	5
1	Identification of five nodal agencies (region wise) and experimental schools	April 2003	June 2003	In-house
2.	Development of tools	April 2003	May 2003	In-house
3.	Finalization of tools and planning to administer the tools	June 2003	July 2003	86,000/-
4.	Regional meetings with teachers of experimental schools (one in each region and one in Delhi) (two days)	July 2003	August 2003	98,000/-
5.	Tryout of textbooks in schools	August 2003	December 2003	75,000/-
6.	Collection and analysis of responses	December 2003	February 2004	In-house
7.	Finalization of responses and development of specific guidelines	February 2004	March 2004	1,80,000/-
8.	Preparation of report	March 2004	-	3,000/-
	SubTotal:			4,42,000/-
9.	Expected expenditure for 2004-05			4,42,000/-
10.	Grand Total			8,84,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.:	10.3
Title:	Finalization of tools and planning for its administration
Proposed Dates:	June-July, 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1.	T.A for 8 non local participants	60,000/-	-
2.	DA for 8 non local participants (260×8×3)	6,240/-	-
3	Local Conveyance for 4 participants (260×4×3)	3,120/-	-
4.	Honorarium for 12 participants(200×12×3)	7,200/-	-
5.	Contingency	9,440/-	-
	Total	86,000/-	

11.2 **Activity No.:** 10 4
Title: Regional Meeting with teachers of experimental schools
Proposed Duration: July-August 2003 (2 days)

S.No.	**Item of Expenditure**	**Estimated Expenditure**	**Remarks if any**
1.	**2.**	**3.**	**4.**
1	T.A. for 11 teachers	5,500/-	
2	DA for 10 persons	4,000/-	
3	Honorarium for local Programme Director	400/	
4	Contingency including postage of filled-in questionnaires)	3,100/-	
	Total	13,000/-	

Expenditure for 6 regional meetings = 13,000 × 6 = 78,000/-
TA/DA for visits of DESM faculty = 20,000/-
Total = 98,000/-

11.3 **Activity No.:** 10.5
Title: Tryout of textbook in schools
Proposed Duration: August-December, 2003

S.No.	**Item of Expenditure**	**Estimated Expenditure**	**Remarks if any**
1.	**2.**	**3.**	**4.**
1.	T.A./D.A. Conveyance charges for three visits of 5 nodal persons to 10 experimental schools in each region @ Rs.500/- per visit per school (500× 5×10×3)	75,000/-	
	Total	75,000/-	

11.4 Activity No.: 10 7

Title: Finalization of inputs and development of specific guidelines in a workshop

Proposed Duration: February-March 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
I	T.A for 15 non-local participants	1,20,000/-	
2.	DA for 15 non-local participants (260×15×5)	19,500/-	
3	Local Conveyance for 5 persons (260×5×5)	6,500/-	
4	Honorarium of r 20 participants (200×20×5)	20,000/-	
5.	Contingency	14,000/-	
	Total	1,80,000/-	

12. **Expected end–product**

A report of in-depth study of Chemistry curriculum for higher secondary stage will be brought out. A consolidated report will be brought out at the end of second phase of the programme.

13. **(a) Plans for utilization and dissemination of the end product (s)**

Results of the study will be used for improvement of Chemistry textbook

(b) Plans for Evaluation of the outcome

-

© Plans for follow up/feedback on utilization of the outcome

-

13. **Personnels Involved**

a. **Name and designation of the Programme Coordinator**

Prof Brahm Parkash

b. **Name of designation of the Associated Faculty**

2. Prof. R D.Shukla
3. Prof. I.P.Aggarwal
4. Dr. Anjni Koul, Lecturer

18.2.2003

Signature
(Programme Coordinator)
Date:

Signature
(Head of the Department)
Date: १९/०२/०३

Abstract

1. Title of the Project:

In-depth study of Biology curriculum for Higher Secondary Stage

2. Specific objectives:

- (i) To obtain feedback (through in-depth study) from the users in terms of quality and load
- (ii) To assess strengths and weaknesses of the book
- (iii) To develop the specific guidelines for improvement of the book and curriculum

3. Methodology:

- (i) Questionnaires/interview schedule in form of tools will be prepared and used in selected schools.
- (ii) The data collected through questionnaire and visits will be analysed and used for preparing specific guidelines.
- (iii) The study will be confined to Class XI during 2003-04. It will be followed by Class XII in the year 2004-05

4. Plans for utilizing the outcome:

The guidelines will be utilized for improvement of future editions of the books for the higher secondary stage

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	In-depth study of Biology curriculum for Higher Secondary Stage
3.	**Type of the programme**	Research & Development
	(b) Category of the programme	New
	(c) If the programme is carried over, mention the present PAC code No.	N A
4.	**(a)Total duration of the programme. As phased in column 10 (months)**	24 months
	(b)Date on which programme to be commenced.	April 2003
	©Target date of completion	March, 2005
5.	**(a) Stage of Education to which the Programme is meant**	Higher Secondary
	(b) If the Programme is meant for a group with special needs	N A
	(c) If the programme is State/Region/Agency specific, please specify the State/Region/Agency	-
6.	**Beneficiaries**	Students/Teachers/Teacher educators

7. **Need and justification:**
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The Biology textbook for Class XI has been published recently and is being used in the schools from the 2002-03 session. It is necessary to carry out in-depth study of Biology curriculum and obtain feedback from the user groups both teachers and students to assess the strengths and weaknesses of the textbook. It is also necessary to get feedback from the subject experts. The feedback would be in terms of quality and load. The feedback would help in development of specific guidelines for the improvement of future editions of the textbook. Similar study will be carried out for Class XII textbook during 2004-05

8. (a) Specific Objectives:

- (i) To obtain feed back (through in-depth study) from the users in terms of quality and load.
- (ii) To assess the strengths and weaknesses of the book
- (iii) To develop specific guidelines for improvement of future editions

(b) Methodology:

(If a research programme, please also indicate sample, research questions / hypotheses and tools).

- (i) Development of tools in form of questionnaire/interview schedule
- (ii) Identification of experimental schools in different regions
- (iii) To administer the tools to obtain responses from students, teachers and teacher educators
- (iv) Analysis of data and preparation of specific guidelines
- (v) Finalization of report

Collaborating Agencies, if any	Name of Agency	Nature of Collaboration
(a)NCERT Constituents	RIEs and D.M. Schools	Academic
(b)Outside agency	KVS, NVS, Directorate of Education, School Boards Science Technical Association Universities	Academic/ Administrative

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organised	Proposed dates From	To	Estimated Expenditure
1	2	3	4	5
1.	Identification of five nodal agencies (region wise) and experimental schools	April 2003	June 2003	In-house
2.	Development of tools	April 2003	May 2003	In-house
3.	Finalization of tools and planning to administer the tools	June 2003	July 2003	86,000/-
4.	Regional meetings with teachers of experimental schools (one in each region and one in Delhi) (two days)	July 2003	August 2003	98,000/-
5.	Tryout of textbooks in experimental schools	August 2003	December 2003	75,000/-
6.	Collection and analysis of responses	December 2003	February 2004	In-house
7.	Finalization of responses and development of specific guidelines	February 2004	March 2004	1,80,000/-
8.	Preparation of report	March 2004	-	3,000/-
	Sub-Total for 2003-04			4,42,000/-
9.	Estimated expenditure for 2004-05			4,42,000/-
	Grand Total:			8,84,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.3
Title: Finalization of tools and planning for its administration
Proposed Dates: June-July, 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1.	T.A for 8 non local participants	60,000/-	-
2.	DA for 8 non local participants (260×8×3)	6,240/-	-
3.	Local Conveyance for 4 participants (260×4×3)	3,120/-	-
4	Honorarium for 12 participants(200×12×3)	7,200/-	-
5.	Contingency	9,440/-	-
	Total	86,000/-	

11.2 **Activity No.:** 10.4
Title: Regional Meeting with teachers of experimental schools
Proposed Duration: July-August 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T.A. for 11 teachers	5,500/-	
2.	DA for 10 persons	4,000/-	
3.	Honorarium for local Programme Director	400/	
4.	Contingency including postage of filled-in questionnaires)	3,100/-	
	Total	13,000/-	

Expenditure for 6 regional meetings = 13,000 × 6 = 78,000/-
TA/DA for visits of DESM faculty = 20,000/-
Total = 98,000/-

11.3 **Activity No.:** 10 5
Title: Tryout of textbook in schools
Proposed Duration: August-December, 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T.A./D A. Conveyance charges for three visits of 5 nodal persons to 10 experimental schools in each region @ Rs 500/- per visit per school (500× 5×10×3)	75,000/-	
	Total	75,000/-	

11.4 Activity No.: 10.7
Title: Finalization of inputs and development of specific guidelines in a workshop
Proposed Duration: February-March 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T.A. for 15 non-local participants	1,20,000/-	
2.	DA for 15 non-local participants (260×15×5)	19,500/-	
3.	Local Conveyance for 5 persons (260×5×5)	6,500/-	
4.	Honorarium of r 20 participants (200×20×5)	20,000/-	
5.	Contingency	14,000/-	
	Total	1,80,000/-	

12. Expected end–product:

Specific guidelines for the Biology book for Class XI during 2003-04

13. (a) Plans for utilization and dissemination of the end product (s)

It will be used for improvement of textbook

(b) Plans for Evaluation of the outcome --

14. Personnel Involved:

14.1 Name and designation of the Programme Coordinator:

Dr. J.S. Gill, Professor

14.2 Name of designation of the Associated Faculty:

1. Dr. K.B. Gupta, Professor
2. Dr. S.C. Jain, Professor
3. Dr. Dinesh Kumar, Reader
4. Dr. Jitendra Singh, Lecturer

Signature Gill 18/2/03
Programme Coordinator
Date:

Signature
Head of the Department
Date: 18.2.03

Abstract

1. **Title of the Project:**

In-depth study of Mathematics curriculum for Higher Secondary Stage

2. **Specific Objectives:**

(i)To carry out an in-depth study the textbook from the perspective of quality and curriculum load

(ii)To develop specific guidelines for further improvement of the book.

3. **Methodology:**

(i)To develop tools for in-depth study

(ii)To try-out the book in experimental schools located in different regions of the country.

(iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators.

(iv)To analyse the responses and evolve specific guidelines for improvement of the book.

(v) In the year 2003-04, the study will be confined to class XI curriculum. In the year 2004-05, the study will be conducted for class XII curriculum.

4. **Plans for utilisingthe outcome:**

Results of the study will be used for improvement of Mathematics textbooks for secondary stage.

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	In-depth study of Mathematics curriculum for Higher Secondary Stage
3.	**(a)Type of the Programme**	Research and Development
	(b)Category of the Programme	New
	© If the Programme is carried over, mention the present PAC Code No.	
4.	**Total Duration of the Programme As phased in Column 10 (months)**	24 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2005
5.	**(a) Stage of Education to which the Programme is meant**	Higher Secondary
	(b) If the Programme is meant for a group with special needs	-
	© If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	-
6.	**Beneficiaries**	Students/Teachers/Teacher educators

7. **Need and justification:**
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The textbook of Mathematics for Class XI has been developed based on National Curriculum Framework for School Education-2000. The book has been in use since the academic session 2002. As curriculum development is a dynamic process, it is necessary to carry out an in-depth study of curriculum textbook in different types of schools located in different regions of the country to know the perception of students, teachers and teacher educators about the quality of the book and the curriculum load. Based on the feedback, specific guidelines will be evolved for further improvement of the book. A similar study will be carried out in the year 2004-05 for class XII.

8. **(a) Specific Objectives:**

(i)To carry out an in-depth study of the textbook from the perspective of quality and curriculum load

(ii) To develop specific guidelines for further improvement of the book.

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

(i)To develop tools for try-out.

(ii)To try-out the book in experimental schools located in different regions of the country.

(iii)To administer the questionnaire, and collect responses of students, teachers and teacher educators.

(iv)To analyse the responses and evolve specific guidelines for improvement of the book.

9.Colaborating Agencies, if any	**Name of agency**	**Nature of Collaboration**
(e) NCERT Constituents	RIEs	Academic
(b) Outside agency	KVS. NVS, Govt. Schools and other agencies using NCERT books, colleges and universities.	

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organised	Proposed dates From	To	Estimated Expenditure
1	2	3	4	5
1.	Identification of five nodal agencies (region wise) and experimental schools	April 2003	June 2003	In-house
2.	Development of tools	April 2003	May 2003	In-house
3.	Finalization of tools and planning to administer the tools	June 2003	July 2003	86,000/-
4.	Regional meetings with teachers of experimental schools (one in each region and one in Delhi) (two days)	July 2003	August 2003	98,000/-
5.	Tryout of textbooks in schools	August 2003	December 2003	75,000/-
6.	Collection and analysis of responses	December 2003	February 2004	In-house
7.	Finalization of responses and development of specific guidelines	February 2004	March 2004	1,80,000/-
8.	Preparation of report	March 2004	-	3,000/-
	Sub Total:			4,42,000/-
9.	Estimated expenditure for 2004-05			4,42,000/-
10.	Grand Total			8,84,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.3
Title: Finalization of tools and planning for its administration
Proposed Dates: June-July, 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1.	T.A for 8 non local participants	60,000/-	-
2.	DA for 8 non local participants (260×8×3)	6,240/-	-
3.	Local Conveyance for 4 participants (260×4×3)	3,120/-	-
4.	Honorarium for 12 participants(200×12×3)	7,200/-	-
5.	Contingency	9,440/-	-
	Total	86,000/-	

11.2 **Activity No.:** 10.4
Title: Regional Meeting with teachers of experimental schools
Proposed Duration: July-August 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T.A. for 11 teachers	5,500/-	
2.	DA for 10 persons	4,000/-	
3.	Honorarium for local Programme Director	400/	
4.	Contingency including postage of filled-in questionnaires)	3,100/-	
	Total	13,000/-	

Expenditure for 6 regional meetings = 13,000 × 6 = 78,000/-
TA/DA for visits of DESM faculty = 20,000/-
Total = 98,000/-

11.3 **Activity No.:** 10.5
Title: Tryout of textbook in schools
Proposed Duration: August-December, 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T.A./D.A. Conveyance charges for three visits of 5 nodal persons to 10 experimental schools in each region @ Rs.500/- per visit per school (500× 5×10×3)	75,000/-	
	Total	75,000/-	

11.4 Activity No.: 10.7
Title: Finalization of inputs and development of specific guidelines in a workshop
Proposed Duration: February-March 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	**2.**	**3.**	**4.**
1.	T.A. for 15 non-local participants	1,20,000/-	
2.	DA for 15 non-local participants (260×15×5)	19,500/-	
3.	Local Conveyance for 5 persons (260×5×5)	6,500/-	
4.	Honorarium of r 20 participants (200×20×5)	20,000/-	
5.	Contingency	14,000/-	
	Total	1,80,000/-	

12. Expected end–product

A report of in-depth study of Class XI Mathematics curriculum will be brought out. A consolidated report will be brought out at the end of second phase of the programme.

13. (a) Plans for utilization and dissemination of the end product (s)

Results of the study will be used for improvement of Mathematics textbook

(f) Plans for Evaluation of the outcome

-

(g) Plans for follow up/feedback on utilization of the outcome

-

14. Personnels Involved

a. Name and designation of the Programme Coordinator

Dr. V.P. Singh, Reader

b. Name of designation of the Associated Faculty

1. Prof. Hukum Singh
2. Dr. Ram Avtar, Reader

Signature 18/02/2003
(Programme Coordinator)
Date:

Signature
(Head of the Department)
Date: 18/02/03

Abstract

1. Title of the Project:

Identification and development of skills for bringing innovation in Science practicals at secondary and higher secondary levels

2.. Specific Objectives:

To identify requisite laboratory skills in science and its related disciplines and bring innovation in laboratory programmes/practicals at secondary and senior secondary levels

3. Methodology :

Laboratory skills considered necessary at secondary and senior secondary levels in science will be identified and deliberated involving experts from colleges, university departments and research organizations Teachers will be associated for evaluating the feasibility of practicals in school situation This will be done through 1,2 brain storming sessions in the first phase. Necessary laboratory experiments will be recommended to inculcate the desired skills. This will finally result into new practical syllabi in science disciplines.

4. Plans for utilising the outcome:

Laboratory programmes/practicals will be designed based on the skills

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	Identification and development of skills for bringing innovation in Science practicals at secondary and higher secondary levels
3.	**(a) Type of the Programme(Please tick)**	Research-cum-Development
	(b) Category of the Programme	New
	(c) If the Programme is carried over, mention the present PAC Code No.	N.A.
4.	**Total Duration of the Programme As phased in Column 10 (months)**	24 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2005
5.	**(a) Stage of Education to which the Programme is meant**	Secondary and higher secondary
	(b) If the Programme is meant for a group with special needs	N.A.
	© If programme is State / Region/ Agency specific, please specify the State/Region/Agency	Experts from Colleges/University Department, research organization and teachers will be associated
6.	**Beneficiaries**	Students/Teachers/Teacher-educators

7. Need and justificatio0n:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

For the last two-three decades a set of pattern of science practicals is in vogue at secondary and higher secondary levels. No doubt, some changes were made in practical syllabi from time to time but they were inadequate to bring out desired changes and develop requisite skills in students in a particular discipline of science. Today, technology has come out in a big way in our teaching-learning which is not properly exploited in our laboratory programmes. Therefore, there is need to examine practical syllabi a fresh and identify required laboratory skills and design laboratory programme to inculcate these skills at secondary and higher secondary levels.

8. (a) Specific Objectives:

To identify requisite laboratory skills in science and its related disciplines and bring innovation in laboratory programmes/practicals at secondary and senior secondary levels.

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Laboratory skills considered necessary at secondary and senior secondary levels in science will be identified and deliberated involving experts from colleges, university departments and research organizations Teachers will be associated for evaluating the feasibility of practicals in school situation. This will be done through 1,2 brain storming sessions in the first phase. Necessary laboratory experiments will be recommended to inculcate the desired skills. This will finally result into new practical syllabi in science disciplines.

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
a) NCERT Constituent	RIEs	Academic
b) Outside Agency	Colleges, Universities, Research Institutes and schools	Academic

10. Phasing* of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.NO	**Activities proposed to be organised**	**Proposed dates From**	**To**	**Estimated Expenditure**
1.	**2.**		**3.**	**4.**
1.	Meeting of experts/teachers for discussing project and prepare a plan of action	April 2003	May 2003	99,200/-
2.	Seminar for identification of laboratory skills	July 2003	August 2003	1,70,000/-
3.	Meeting of experts for finalization of skills	October 2003	November 2003	99,200/-
	Total			3,68,400/-
	*A parallel programme activities/ expenditure will be for the year 2004-05			

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.1
Title: Meeting of experts/teachers for discussing project and prepare a plan of action
Proposed Dates: April-May 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA of 10 experts	80,000/-	
2.	DA (260x10x2)	5,200/-	
3.	Honorarium (200x10x2)	4,000/-	
4.	Contingency (Working lunch, tea/coffee etc.)	10,000/-	
	Total	99,200/-	

11.2 Activity No.: 10.2
Title: Seminar for identification of laboratory skills
Proposed Dates: July-August 2003 (4 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA of 20 experts	1,00,000/-	
2.	DA (260x20x4)	20,800/-	
3.	Local conveyance for 5 participants (260x5x4)	5,200/-	
3.	Honorarium (200x25x4)	20,000/-	
4.	Contingency (Working lunch, tea/coffee etc.)	24,000/-	
	Total	1,70,000/-	

11.3 Activity No.: 10.3
Title: Meeting of experts for finalization of skills
Proposed Dates: October-November 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA of 10 experts	80,000/-	
2.	DA (260x10x2)	5,200/-	
3.	Honorarium (200x10x2)	4,000/-	
4.	Contingency (Working lunch, tea/coffee etc.)	10,000/-	
	Total	99,200/-	

12. Expected end – product:

Laboratory skills in different discipline of science

13. (a) Plans for utilization and dissemination of the end product (s)

Laboratory programmes/practicals will be designed based on the skills

(b) Plans for Evaluation of the outcome

New practical syllabi will be implemented in schools and evaluated after some time

© Plans for follow-up/Feed back on utilisation of the outcome: N.A.

14. Personnel Involved

14.1 Name and designation of the Programme Coordinator

Prof. R.D. Shukla

14.2 Name of designation of the Associated Faculty

(1) Prof. J.S. Gill
(2) Prof. B.K. Sharma
(3) Prof. I.P. Aggarwal
(4) A few more faculty members depending on the needs of the project

Signature
Programme Coordinator
Date: 16\02\03

Signature
Head of the Department
Date: 13\02\03

Abstract

1. Title of the Programme:

Linking Mathematics Education with Life Skills as identified in National curriculum framework 2000

2. Specific Objectives:

To develop context based teaching material that link mathematical concepts with life skills as identified in National Curriculum framework 2000

3. Methodology:

The methodology of the proposed project involves following steps:

(i) Review of the literature related to the said title.
(ii) Survey of current mathematics teaching practices in selected schools in Delhi.
(iii) Development of teaching material that links life skills with mathematical concepts
(iv) Orientation of practising teachers to promote skill based teaching in schools.

4. Plans for utilizing the outcome:

Through SCERTs & DIETs

Programme Proposal for the year 2003-2004

1.	**Name of the NCERT Constitute/ Department**	DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS
2.	**Title of the Programme**	Linking mathematics education with life skills as identified in National Curriculum Framework 2000.
3.	**a) Type of the Programme**	Development / Research
	b) Category of the Programme	New
	c) If the Programme is carried over, mention the present PAC Code No.	N. A.
4.	**Total Duration of the Programme as phased in Column 10 (Months)**	One year
	a) Date on which Programme Commenced	April 2003
	b) Target Date of Completion	March 2004
5.	**a) Stage of Education to which the Programme is meant**	Upper primary stage
	b) If the Programme is meant for a group with Special Needs	N.A.
	c) If the Programme is State/Region/Agency Specific, please specify the State/Region/Agency	N.A
6.	**Beneficiaries**	Students/teachers

7. Need and Justification:
(If an On-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current Financial Year.)

As envisaged in National Curriculum framework 2000 'education, by and large, suffers from the gap between its content and the living experiences of the students'. In order to justify and promote this view we, require to link school mathematics with life skills so that students not only see purpose of learning it, but become confident to use in any situation that needs tangible solution.

8. (a) Specific Objectives:

To develop context based teaching material that link mathematical concepts with life skills as identified in National Curriculum framework 2000.

(c) Methodology:
(If a research programme, Please also indicate sample, research questions/ hypotheses and tools)

The methodology of the proposed project involves following steps:
(i) Review of the literature related to the said title.
(ii) Survey of current mathematics teaching practices in selected schools in Delhi
(iii)Development of teaching material that links life skills with mathematical concepts
(iv)Orientation of practising teachers to promote skill based teaching in schools.

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
(a) NCERT Constituents	-	-
(b) Outside Agency	-	-

10. Phasing of the Programme with precise in information on Activities (including in-house activities involving expenditure of otherwise clearly indicating the methodology to be followed)

S.No.	**Activities Proposed to be Organised**	**Proposed Dates**		**Estimated Expenditure (if any)**
		From	**To**	
1	2	3	4	5
1.	Preparation of paper on Notion of life skills in Mathematics	April	June, 2003	In-house
2.	Two days meeting to supplement/ discuss identified life skills in the context of math with practising teachers	Last week of, July 2003		66,000/-
3.	Development of teaching material that links life skills for classroom transaction	August 2003	December 2003	In-house
4.	Regional Workshop to orient practising teachers with the developed teaching material– Southern region	January 2004	January 2004	87,000/-
5.	Regional Workshop to orient practising teachers with the developed teaching material– Eastern region	February 2004	February 2004	87,000/-
6.	Compilation of feedback report from the teachers	March 2004	March 2004	In-house activity
7.	Preparation of project report	March 2004	-	-
	Total			2,40,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.2
Title : To discuss identified life skills-linked with mathematics
Proposed Dates : Last week of July, 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA to local participants (260 × 10 × 2)	5,200/-	-
2.	TA to non-local participants (5000 × 10)	50,000/-	
3.	DA to non-local participants (260 × 10 × 2)	5,200/-	
4.	Miscellaneous (Tea/Coffee/Books etc.)	5,600/-	
	Total :	66,000/-	

11.2 Activity No.: 10.4
Title : Orientation of Practising teachers of Southern region
How to link math with life skills in the classroom
Proposed Duration : January 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA to local participants (260 × 5 × 5)	6,500/-	
2.	TA to non-local participants (2000 × 15)	30,000/-	
3.	DA to non-local participants (260 × 15 × 5)	19,500/-	
4.	Honorarium to local Directors (200 × 5)	1,000/-	
5.	Contingency (tea/coffee, books etc.)	10,000/-	
6.	TA / DA of NIE faculty members	20,000/-	
	Total	87,000/-	

11.2 Activity No.: 10.5
Title : Orientation of Practising teachers of Eastern region
How to link math with life skills in the classroom
Proposed Duration : February 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA to local participants (260 × 5 × 5)	6,500/-	
2.	TA to non-local participants (2000 × 15)	30,000/-	
3.	DA to non-local participants (260 × 15 × 5)	19,500/-	
4.	Honorarium to local Directors (200 × 5)	1,000/-	
5.	Contingency (tea/coffee, books etc.)	10,000/-	
6.	TA / DA of NIE faculty members	20,000/-	
	Total	87,000/-	

12. Expected end-product

Handbook – 'Linking mathematics education with life skills'.

13. (a) Plans for utilization and dissemination of the end-product(s)

Though SCERTs & DIETs

(b) Plans for Evaluation of the Outcome

Analysis of evaluation sheets designed as an inbuilt component in the proposed project

(c) Plans for follow up / Feedback on utilization of the outcome

Assessment of students achievement in mathematics as follow up study

14. Personal Involved

(a) Name and Designation to the Programme Coordinator

Dr. Surja Kumari

SKumari
Signature
Programme Coordinator
Date: 18·02·03

Signature
Head of the Department
Date: 18|02|03

Abstract

1. **Title of the Project:**

Development of Laboratory Manual in Physics for Higher Secondary Stage

2. **Specific Objectives:**

(1) To develop laboratory manual in Physics for classes XI and XII, based on the new curriculum

(2) To motivate students towards performing open-ended experiments and activities, and promoting development of skills for carrying out practical work.

(3) To promote scientific aptitude in students through investigatory project work.

3. **Methodology :**

(1) Development of draft manuscript of the Physics Laboratory Manual by involving DESM faculty and outside experts and in a writing workshop

(2) Meeting of the core-team to review the first draft manuscript

(3) Revision of the first draft by the core-team members through in-house activity

(4) Try-out of suggested experiments/activities in simulated conditions and actual field situations in schools (if possible)

(5) Review and finalisation of the manuscript in workshop by involving subject experts, Central Boards and SCERT personnel, practising teachers and teacher educators

(6) Submission of manuscript for printing

(7) Development of material will be based on semesterised system

4. **Plans for utilising the outcome:**

The laboratory manual will be used by the students of Central Boards/State Boards offering NCERT curriculum and also by the teachers and teacher educators throughout the country.

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	Development of Laboratory Manual in Physics for Higher Secondary Stage
3.	**(a) Type of the Programme (Please tick)**	Development
	(b) Category of the Programme	New
	(c) If the Programme is carried over, mention the present PAC Code No.	N.A.
4.	**Total Duration of the Programme As phased in Column 10 (months)**	12 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5.	**(a) Stage of Education to which the Programme is meant**	Higher Secondary
	(b) If the Programme is meant for a group with special needs	N.A.
	© If programme is State / Region/ Agency specific, please specify the State/Region/Agency	N.A.
6.	**Beneficiaries**	Students/Teachers/Teacher Educators

7. Need and justification:

(If an on-going/carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

Based on the new syllabus developed for the higher secondary stage (Guidelines and Syllabi for Higher Secondary Stage, NCERT-2001), the Physics Textbook for Class XI has already been published and for Class XII, it is being printed. Practical work is an integral part of Physics teaching-learning. In order to supplement the conceptual understanding and to integrate the practical work in Physics with content, development of certain skills for carrying out practical work is required. The basic purpose of the Physics Laboratory Manual is to motivate the students towards practical work – a neglected field, by involving them in 'process-oriented performance' learning and to infuse life to the sagging practical work in schools. In view of the alarming situation with regard to conduct of practical work in schools, the development of laboratory manual is desirable and hence the need.

8. (a) Specific Objectives:

(1) To develop laboratory manual in Physics for classes XI and XII, based on the new curriculum
(2) To motivate students towards performing open-ended experiments and activities, and promoting development of skills for carrying out practical work.
(3) To promote scientific aptitude in students through investigatory project work.

(b) Methodology :
(If a research programme, please also indicate sample, research questions / hypotheses and tools)

(1) Development of draft manuscript of the Physics Laboratory Manual by involving DESM faculty and outside experts and in a writing workshop

(3) Meeting of the core-team to review the first draft manuscript

(3) Revision of the first draft by the core-team members through in-house activity

(4) Try-out of suggested experiments/activities in simulated conditions and actual field situations in schools (if possible)

(5) Review and finalisation of the manuscript in workshop by involving subject experts, Central Boards and SCERT personnel, practising teachers and teacher educators

(6) Submission of manuscript for printing

(7) Development of material will be based on semesterised system

9.	**Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
	a) NCERT Constituent	RIEs, NIE Departments	Academic
	b) Outside Agency	Schools, Colleges, University Departments, State functionaries, Central Boards of Education	Academic

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.NO	Activities proposed to be organised	Proposed dates From	To	Estimated Expenditure
1	2	3	4	5
1.	Literature Survey and Collection of relevant information	April 2003		In-house
2.	Planning Meeting of the core-team and experts	April 2003		64,000/-
3.	Development of selected experiments and activities by the core-team	May 2003		In-house
4.	Writing Workshop (core-team and experts)	May 2003		1,55,500/-
5.	Meeting of the core-team to review the first draft	June 2003		57,000/-
6.	Revision of the first draft by the core-team	June 2003		In-house
7.	Meeting of the core-team for the over-view of revised material, planning for try-out and preparation of tools for try-out	June 2003		49,200/-
8.	Try-out of revised draft by the core-team in the laboratory and in local schools	July 2003	October 2003	21,000/-
9.	Revision of the try-out draft by the core-team	November 2003		In-house
10.	Workshop to review the revised, try-out draft by experts/teachers	November 2003		1,32,600/-
11.	Editing and finalization of the manuscript	December 2003		42,700/-
12.	Preparation of the press copy of the manuscript, including preparation of illustrations	December 2003	January 2004	In-house
13.	Contingent expenditure in preparation of illustrations			75,000/-
14.	Seeing the laboratory manual through press	January 2004	March 2004	In-house
	Total			5,97,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.2
Title: Planning Meeting of the core-team and experts
Proposed Dates April 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 6 non-local participants	42,000/-	
2.	DA (260x6x3)	4,680/-	
3.	Honorarium (200x11x3)	6,600/-	
4.	Local conveyance (260x5x3)	3,900/-	
5.	Contingency (Working lunch, tea/coffee, books etc.)	6,820/-	
	Total	64,000/-	

11.2 Activity No.: 10.4
Title: Writing Workshop (core-team and experts)
Proposed Dates May 2003 (8 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 13 non-local participants	56,000/-	
2.	DA (260x13x8)	27,040/-	
3.	Honorarium (200x23x8)	36,800/-	
4.	Local conveyance (260x10x8)	20,800/-	
5.	Contingency (Working lunch, tea/coffee, books etc.)	14,860/-	
	Total	1,55,500/-	

11.3 Activity No.: 10.5
Title: Meeting of the core-team to review the first draft
Proposed Dates June 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 4 non-local participants	38,000/-	
2	DA (260x4x5)	5,200/-	
3.	Honorarium (200x7x5)	7,000/-	
4.	Local conveyance (260x3x5)	3,900/-	
5	Contingency (Working lunch, tea/coffee, books etc)	2,900/-	
	Total	57,000/-	

11.4 Activity No.: 10 7
Title: Meeting of the core-team for the over-view of revised material, planning for try-out and preparation of tools for try-out
Proposed Dates June 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1	TA for 4 non-local participants	38,000/-	
2.	DA (260x4x3)	3,120/-	
3	Honorarium (200x6x3)	3,600/-	
4	Local conveyance (260x3x3)	2,340/-	
5.	Contingency (Working lunch, tea/coffee, books etc)	2,140/-	
	Total	49,200/-	

11.5 Activity No.: 10.8
Title: Try-out of revised draft by the core-team in the laboratory and in local schools
Proposed Dates July 2003 – October 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	Materials	15,000/-	
2.	Local Conveyance	6,000/-	
	Total	21,000/-	

11.6 Activity No.: 10.10
Title: Workshop to review the revised, try-out draft by experts/teachers
Proposed Dates November 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 15 non-local participants	60,000/-	
2.	DA (260x15x5)	19,500/-	
3.	Honorarium (200x24x5)	24,000/-	
4.	Local conveyance (260x12x5)	15,600/-	
5	Contingency (Working lunch, tea/coffee, books, materials etc.)	13,500/-	
	Total	1,32,600/-	

11.7 Activity No.: 10.11
Title: Editing and Finalization of the manuscript
Proposed Dates December 2003 (8 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1	TA for 2 non-local participants	24,000/-	
2.	DA (260x2x8)	4,160/-	
3	Local conveyance (260x2x8)	4,160/-	
4	Honorarium (200x4x8)	6,400/-	
5.	Contingency (Working lunch, tea/coffee, books etc.)	3,980/-	
	Total	42,700/-	

12. Expected end – product:

Physics Laboratory Manual for Higher Secondary stage (Classes XI & XII)

13. (a) Plans for utilization and dissemination of the end product (s)

The laboratory manual will be used by students of Central Boards/State Boards offering NCERT Curriculum and also by the teachers and teacher educators throughout the country.

(b) Plans for Evaluation of the outcome

Feedback will be taken from users after implementation and material will be revised, if need.

14. Personnel Involved

14.1 Name and designation of the Programme Coordinator

Dr B.K Sharma, Professor

14.2 Name of designation of the Associated Faculty

(1) Dr. V.P. Srivastava, Reader
(2) Dr. Gagan Gupta, Reader
(3) Three outside experts
(4) Three to four teachers to be associated

BKSharma
Signature
Programme Coordinator
Date: 18.02.2003

Signature
Head of the Department
Date: 18/02/03

Abstract

1. Title of the Project:

Development of laboratory manual of Biology for Higher Secondary Stage

2. Specific Objectives:

To develop a laboratory manual of Biology for Higher Secondary Stage

3. Methodology:

(i) Development and review of the write ups of the experiments with the help of the core group.
(ii) Try out of the experiments based on write up
(iii) Review of the write up with the help of experts and teachers
(iv) Final preparation of the manual for publication.

4. Plans for utilising the outcome:

The proposed manual would be used by the students and the teachers

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Development of laboratory manual of Biology for Higher Secondary Stage
3.	**(a) Type of the Programme**	Development
	(b) Category of the Programme	New
	(c) If the Programme is carried over, mention the present PAC Code No.	N.A
4.	**Total Duration of the Programme As phased in Column 10 (months)**	One year
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5.	**(a) Stage of Education to which the Programme is meant**	Higher Secondary
	(b) If the Programme is meant for a group with special needs	N.A
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	N.A
6.	**Beneficiaries**	Students /Teachers/ Teacher educators

7. Need and justification:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

Based on the recommendations of National Curriculum Framework for the School Education and the revised syllabi, new text book of Biology for Class XI has already been published. The text book for Class XII is in the final stage of publication. The syllabus for the practical component is also suitably revised. Therefore, it is necessary to develop a laboratory manual for the higher secondary stage. Besides the use of the manual in carrying out the core experiments, it would also help the students to perform activities based on them.

8. (a) Specific Objectives:

To develop a laboratory manual of Biology at the higher secondary stage.

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

(i) Development and review of the write ups of the experiments with the help of the core group.
(ii) Try out of the experiments based on write up.
(iii) Review of the write up with the help of experts and teachers
(iv) Final preparation of the manual for publication.

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
NCERT Constituents	RIEs	Academic
Outside Agency	Various schools like KVS, JNV, Govt. Schools, Public Schools	Academic

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	**Activities proposed to be organized**	**Proposed dates** **From**	 **To**	**Estimated Expenditure (If any)**
1	2	3	4	5
1.	Meeting for identifying the core group	April 2003	May, 2003	In House
2	Plan meeting of the core group	May 2003	June 2003	48,340/-
3.	Development of the write up by core group	June 2003	July 2003	-
4.	Meeting of the core-group to finalise the write up	August 2003	September 2003	59,300/-
5.	Laboratory try out of the experiments with teacher	December 2003		1,12,400/-
6.	Review of the write up by expert and teacher	January 2004		1,45,700/-
7.	Modification and editing of the manuscript	January 2004	February 2004	32,700/-
8.	Drawing of figures & illustrations	January 2004	February 2003	50,000/-
	Total			4,48,440/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.2
Title: Plan meeting of the core group
Proposed Dates: May 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 2 persons (18,000x2)	36,000/-	
2.	DA for 4 persons for two days (260x2x2)	1,040/-	
3	Conveyance of 4 persons for two days (260x4x2)	2,080/-	
4.	Honorarium for 6 persons for two days (200x6x 2)	2,400/-	
5.	Contingency (Working lunch, tea/coffee, books etc)	6,820/-	
	Total	48,340/-	

11.2 Activity No.: 10.4
Title: Meeting of the core group to finalise the write up
Proposed Dates: August 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 2 persons	36,000/-.	
2.	DA for 2 persons for 5 days (260x2x5)	2,600/-	
3	Conveyance for 4 person for 5 days (260x4x5)	5,200/-	
4.	Honorarium for 6 persons for 5 days (200x6x5)	6,000/-	
5.	Contingency (Working lunch, tea/coffee, books etc.	9,500/-	
	Total:	59,300/-	

11.3 Activity No.: 10.5
Title: Laboratory try out of the experiments
Proposed Date: September-December 2003 (15 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	Apparatus chemicals and other laboratory requirements	40,000/-	
2	One JPF for 9 months @ Rs. 4,400/- x 9	39,600/-	For regular try-out of the experiments. Laboratory try-out with teachers will be done in five phases with small group of teachers
3.	Local conveyance for 2 persons (260x2x15)	7,800/-	
4.	Honorarium for 2 person (200x2x15)	6,000/-	
5	Contingency (Working lunch, tea/coffee, books etc)	19,000	
	Total	1,12,400/-	

11.4 Activity No.: 10.6
Title: Review of the write ups of experiments
Proposed date: January 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1.	TA for 14 persons	76,000/-	
2.	DA for 14 persons (260x14x5)	18,200/-	
3.	Local conveyance for 4 persons (200x4x5)	4,000/-	
4.	Honorarium for 18 persons (200x18x5)	18,000/-	
5.	Contingency (Working lunch, tea/coffee, books etc)	29,500/-	
	Total	1,45,700/-	

11.5 Activity No.: 10.7
Title: Editing of the manuscript
Proposed date: February 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1.	TA for 2 Non local person	19,300/-	
2	Local conveyance for 2 persons (260x2x5)	2,600/-	
3.	Honorarium for 3 persons (200x3x5)	3,000/-	
4.	Contingency (Working lunch, tea/coffee, books etc.)	7,800/-	
	Total	32,700/-	

12. Expected end – product

Laboratory manual (Book)

13. (a) Plans for utilization and dissemination of the end product (s)

The published manual (book) will be used by students and teachers of Higher Secondary Stage

(b) Plans for Evaluation of the outcome

Manual will be evaluated on the basis of the feed back from the user groups

14. Personnel Involved

a) Name and designation of the Programme Coordinator

Dr Dinesh Kumar, Reader

b) Name of designation of the Associated Faculty

Prof. J.S. Gill
Prof. K B. Gupta
Dr Jitendra Singh, Lecturer

Dinesh Kumar
18.8.03
Signature
Programme Coordinator
Date·

Signature
Head of the Department
Date· 20/08/03

Abstract

1. **Title of the Project:**

   Development of Laboratory Manual in Chemistry for Higher Secondary Stage

2. **Specific Objectives:**

   (i)To develop laboratory manual for higher secondary stage in Chemistry centring around core experiments and development of essential skills
   (ii)To train students in the area of open-ended experiments to make them enquiry-minded
   (iii)To promote scientific aptitude in students through project work

3. **Methodology:**

   (i) Development of textual material in a workshop of one week
   (ii) Refinement of the developed textual material through in-house activity
   (iii)Try out of experiments suggested through in-house activity and actual field try-out in schools
   (iv) Review and finalization of the textual material developed
   (v) Submission of manuscript for publication

4. **Plans for utilising the outcome:**

   Manual prepared will be used by students of CBSE and State Boards offering NCERT Curriculum throughout the country

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Development of laboratory manual in Chemistry for Higher Secondary Stage
3.	**(d) Type of the Programme**	Development
	(e) Category of the Programme	New
	(f) If the Programme is carried over, mention the present PAC Code No.	N A
4.	**Total Duration of the Programme As phased in Column 10 (months)**	One year
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5.	**(a) Stage of Education to which the Programme is meant**	Higher Senior Secondary
	(b) If the Programme is meant for a group with special needs	N.A.
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	N A
6.	**Beneficiaries**	Students /Teachers

7. **Need and justification:**

(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

According to new changed syllabus for higher secondary stage, text book for class XI is already developed and for class XII, it is being developed. To supplement the conceptual understanding and to strengthen development of subject specific skills laboratory manual is desired and hence the need.

8. (a) Specific Objectives:

(i) To develop laboratory manual for higher secondary stage in Chemistry centring around core experiments and development of essential skills

(ii) To train students in the area of open-ended experiments to make them enquiry-minded

(iii) To promote scientific aptitude in students through project work

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

(i) Development of textual material in a workshop of one week
(ii) Refinement of the developed textual material through in-house activity
(iii) Try out of experiments suggested through in-house in activity and actual field try-out in schools
(iv) Review and finalization of the textual material developed
(v) Submission of manuscript for publication

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
NCERT Constituents	NIE Departments, RIEs	Academic
Outside Agency	Schools, Colleges, University Deptts. State functionaries	Academic

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	Activities proposed to be organized	Proposed dates		Estimated Expenditure (If any)
		From	To	
1	2	3	4	5
1.	Literature survey and collection of relevant information	April 2003		In-house
2.	Planning meeting for writing workshop	May 2003		26,840/-
3.	Writing workshop (Core team and local experts)	May 2003		1,15,040/-
4.	Refinement of material developed	June 2003		In-house
5.	Overview of refined material, planning for tryout and preparation of tools for tryout	June 2003		26,840/-
6.	Tryout at three places (By core team in laboratories and actual tryout in local schools)	July 2003	October 2003	25,500/-
7.	Review workshop for reviewing the prepared and try-out draft material	November 2003		1,50,600/-
8.	Editing and finalization of the material for publication	December 2003		22,440/-
9	Final typing and preparation of illustrations	December 2003	January 2004	20,000/-
10	Seeing the book through press	January 2004	March 2004	In-house
	Total			3,87,260/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.2
Title: Planning meeting for writing workshop
Proposed Dates: April 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for non-local participants	23,000/-	
2.	DA for non-local participants (260x2x2)	1,040/-	
3	Honorarium (200x2x2)	800/-	
4	Contingency (Working lunch, tea/coffee, etc.)	2,000/-	
	Total	26,840/-	

11.2 Activity No.: 10.3
Title: Writing workshop (core team and local experts)
Proposed Dates: May 2003 (7 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1	TA for non-local persons	23,000/-	
2.	DA for 2 persons (260x2x7) (260x2x2)	3,640/-	
3.	Local Conveyance for 20 persons (260x20x7)	36,400/-	
4	Honorarium for 20 persons (200x20x7)	28,000/-	
5	Contingency (Working lunch, tea/coffee, books etc.)	24,000/-	
	Total	1,15,040/-	

11.3 Activity No.: 10.5
Title: Over-view of refined material, planning for try-out and Preparation of tools for try-out
Proposed Dates: June 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for non-local participants	23,000/-	
2.	DA for non-local participants (260x2x2)	1,040/-	
3.	Honorarium (200x2x2)	800/-	
4.	Contingency (Working lunch, tea/coffee, etc)	2,000/-	
	Total	26,840/-	

11.4 Activity No.: 10.6
Title: Try-out at 3 places
Proposed Date: July 2003-September 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	Chemicals	21,000/-	
2.	Local conveyance	4,500/-	
3.	Total	25,500/-	

11.5 Activity No.: 10.7
Title: Review workshop for reviewing the prepared and try-out Draft material
Proposed date: November 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1.	TA for non-local participants	86,000/-	
2	DA for non-local participants (260x12x5)	15,600/-	
3.	Local Conveyance for 10 persons (260x10x5)	13,000/-	
4	Honorarium for 18 persons for five days (200x18x5)	18,000/-	
5	Contingency (Working lunch, tea/coffee, books etc.)	18,000/-	
	Total	1,50,600/-	

11.5 Activity No.: 10.8
Title: Editing and finalization of the material for publication
Proposed date: December 2003 (7 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1.	TA for non-local participants	13,000/-	
2.	DA for non-local participants (260x2x7)	3,640/-	
3	Honorarium for 2 persons for (200x2x7)	2,800/-	
4.	Contingency (Working lunch, tea/coffee, books etc.)	3,000/-	
	Total	22,440/-	

12. Expected end – product

Laboratory manual for higher secondary stage

13. (a) Plans for utilization and dissemination of the end product (s)

Manual developed will be used by students of CBSE local and state boards offering NCERT Curriculum through out the country

(b) Plans for Evaluation of the outcome

Feed back will be procured from the clientele group and material will be revised as per need

14. Personnels Involved

a) Name and designation of the Programme Coordinator

Dr. I.P.Aggarwal, Professor

b) Name of designation of the Associated Faculty

Prof. R.D. Shukla, Head, DESM
Prof B. Prakash
Dr. Anjni Koul, Lecturer
Two faculty members from the RIEs

18 2 03

Signature
Programme Coordinator
Date:

Signature
Head of the Department
Date: 18.02.03

Abstract

1. **Title of the Project:**

   Development of Teachers handbook for designing mathematics laboratory in schools

2. **Specific objectives:**

   To develop Teachers handbook for designing mathematics laboratory at upper primary and secondary stages.

3. **Methodology:**

   1 Identification of essential components and activities at Upper Primary and Secondary stages for a Mathematics Laboratory
   2 Review of the identified components and activities and development of first draft of the handbook.
   3. Refinement of the first draft.
   4. Finalisation of the handbook.
   5. Editing and printing of the handbook.

4. **Plans for utilizing the outcome:**

   Handbook will be printed and supplied to the States/Union Territories

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Development of Teachers handbook for designing mathematics laboratory in schools
3.	**Type of the programme**	Development
	(b) Category of the programme	New
	(c) If the programme is carried over, mention the present PAC code No.	N.A
4.	**(a)Total duration of the programme. As phased in column 10 (months)**	12 months April 2003
	(b) Date on which programme to be commenced.	March, 2004
	(c) Target date of completion	
5.	**(a) Stage of Education to which the Programme is meant**	Upper Primary and Secondary
	(b) If the Programme is meant for a group with special needs	N A
	(c) If the programme is State/Region/Agency specific, please specify the State/Region/Agency	N A.
6.	**Beneficiaries**	Students/Teachers/Teacher educators

7. Need and justification:
(If an on going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

National Curriculum Framework for School Education (NCFSE) 2000, has stressed that mathematics learning should be imparted through activities. These activities may involve the use of concrete local indigenous materials Keeping this view in mind the Department has established a mathematics laboratory where some models charts developed at upper primary, secondary and higher secondary stages have been kept. In order to educate prospective teachers regarding concept of mathematics laboratory in schools there is a need for development of a Teachers handbook. This will enable the teachers to develop activities and establish a mathematics laboratory in their respective schools.

8. (a) Specific Objectives:

To develop Teachers handbook for designing mathematics laboratory at upper primary and secondary stages.

(b) Methodology :
(If a research programme, please also indicate sample, research questions / Hypotheses and tools).

1. Identification of essential components and activities at Upper Primary and Secondary stages for a Mathematics Laboratory.
2. Review of the identified components and activities and development of first draft of the handbook
3. Refinement of the first draft
4. Finalisation of the handbook
5. Editing and printing of the handbook

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
(a)NCERT Constituents	DM Schools	Teachers participation
(b)Outside agency	K.V., N.V etc.	Teachers participation

11. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organized	Proposed dates		Estimated Expenditure
		From	To	
1.	Identification of essential components and activities for Mathematics Laboratory at Upper Primary and Secondary Stages	April 2003	May 2003	In house
2.	Review of the identified components and activities for Mathematics Laboratory and development of the first draft of handbook	May 2003	June 2003	70,000/-
3.	Refinement of the first draft	June 2003	October 2003	In house
4	Finalisation of the handbook	November 2003		70,000/-
5	Editing and printing of the handbook	December 2003	March 2004	In house
	Total			1,40,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No. : 10.2

Title: Review of the identified components and activities for Mathematics Laboratory and development of first draft of the handbook

Proposed Dates: May-June 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	TA to 18 Local/ non local participants	36,000/-	
2	DA to 3 non local participants	4,000/-	
3.	Honorarium to 18 participants	18,000/-	
4.	Miscellaneous (Working lunch, tea/coffee, Purchase of books, preparation of illustrations etc)	12,000/-	
	Total	70,000/-	

11.2 **Activity No. :** 10 4
Title: Finalisation of the handbook
Proposed Dates: November 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1.	TA to 18 Local/ non local participants	36,000/-	
2	DA to 3 non local participants	4,000/-	
3	Honorarium to 18 participants	18,000/-	
4.	Miscellaneous (Working lunch, tea/coffee, computer typing etc)	12,000/-	
	Total	70,000/-	

12. Expected end-product·

Teachers Handbook for designing Mathematics Laboratory

13. (a) Plans for utilization and dissemination of the end product (s)

Handbook will be printed and supplied to the states/Union Territories

(b) Plans for Evaluation of the outcome

Handbook will be evaluated on the basis of the feedback received from states/Union Territories

(c) Plans for follow up/feedback on utilization of the outcome

On the basis of the feedback received, Handbook will be modified.

14. Personnel Involved:

14.1 Name and designation of the Programme Coordinator:

Dr. Hukum Singh, Professor

14.2 Name of designation of the Associated Faculty:

1. Dr. Ram Avtar, Reader
2. Dr. V P.Singh, Reader
3. Shri Mahender Shankar, Sr. Lecturer (S. G.)

Hukum Singh
Signature
Programme Coordinator
Date. 18 2-2003

Signature
Head of the Department
Date: 18/02/03

Abstract

1. **Title of the Project:**

Development of Textbook in Science and Technology for the Upper Primary Stage (Class VIII) (English and Hindi)

2. **Specific Objective:**

1. Preparation of Text-book in Science and Technology for Class VIII (English and Hindi).
2. Preparation of other package materials, as and where necessary.

3. **Methodology:**

Through in-house activity and writing workshops and reviews and editing by associating outside experts/teachers as indicated in Column 10

4. **Plan for Utilising the outcome:**

The manuscripts will be made available to the Publication Department of the Council for publication and printing The Publication Department would be expected to make them available to schools in different States/Uts.

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	Development of Textbook in Science and Technology for the Upper Primary Stage (Class VIII) (English and Hindi)
3.	**(a) Type of the Programme**	Development
	(b) Category of the Programme	On going
	(c) If the Programme is carried over, mention the present PAC Code No.	6.1
4.	**Total Duration of the Programme As phased in Column 10 (months)**	Round the year
	(a) Date on which programme commenced	April, 2001
	(b) Target Date of completion	March, 2004
5.	**(a) Stage of Education to which the Programme is meant**	Upper primary
	(b) If the Programme is meant for a group with special needs	N.A.
	© If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	N.A.
6.	**Beneficiaries**	Students, Teachers, Teacher Educators

7. Need and justificatioOn:

(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

A need has arisen to prepare new text-books in 'Science and Technology' for the Upper Primary Stage in view of the National Curriculum Framework for School Education published by the Council in November 2000.

8. (a) Specific Objectives:

Preparation of textbook in Science and Technology for Class VIII (English and Hindi).

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Through in-house activity, writing workshops and reviews and editing by associating outside experts

9. Collaborating Agencies, if any		**Name of Agency**	**Nature of Collaboration**
(a)	**NCERT Constituents**	RIE	Writing/Reviewing
(b)	**Outside Agency**	SCERT/Universities/Colleges/Retired experts	Academic

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	**Activities proposed to be organised**	**Proposed dates From**	**To**	**Estimated Expenditure (If any)**
1	**2**		**3**	**4**
1.	Meeting of the Writing team for allocation of work and general discussion	April 2003 (2 days)	-	59,000/-
2	Meeting of the Writing Team for discussing the draft chapters	May 2003 (3 days)	-	65,200/-
3	Meeting of the Writing Team for reviewing the second draft	June, 2003 (5 days)	-	71,800/-
4.	Meeting of writing team to discuss and finalize the draft of the manuscript	July, 2003 (5 days)	-	71,800/-
5.	Workshop to Review the draft manuscript by Experts and Teachers	August 2003	September 2003 (5 days)	1,30,000/-
6	Development of Hindi version of the manuscript	October 2003	November 2003	In house
7.	Final editing of the textbook	November 2003 (5 days)		71,800/-
8	Workshop to Review the Hindi Version of the manuscript and its finalization	December 2003	January 2004 (5 days)	1,30,000/-
9.	Photocopying/Word Processing/Art work/ cost of floppies to be paid to outside authors			74,400/-
	Total			6,74,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.1
Title: Meeting of the Writing team for allocation of work and general discussion
Proposed Dates: April, 2003 (2 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1	TA for 6 participants (by air 4)	50,000/-	
2.	DA for 6 participants (260x6x2)	3,120/-	
3.	Honorarium to 6 participants (200x6x2)	2,400/-	
4	Contingency (Tea/Coffee, working lunch, payment to authors for computer typing, Photostat, postage etc)	3,480/-	
	Total	59,000/-	

11.2 Activity No.: 10 2
Title: Meeting of the Writing Team for discussing the draft chapters
Proposed Dates: May, 2003 (3 Days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 6 participants (by Air 4)	50,200/-	
2.	DA to 6 participants (260x6x3)	4,680/-	
3.	Honorarium (200x6x3)	3,600/-	
4.	Contingency (Working lunch, tea/coffee and payment to outside authors for typing, photocopying etc.)	6,720/-	
	Total	65,200/-	

11.3 Activity No.: 10.3
Title: Meeting of the Writing Team for reviewing the second draft
Proposed Dates: June, 2003 (5 Days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1	TA for 6 participants (by Air 4)	50,000/-	
2	DA to 6 participants (260x6x5)	7,800/-	
3	Honorarium to 6 participants (200x6x5)	6,000/-	
4	Contingency (Working lunch, tea/coffee, payment to outside authors for typing, photocopy)	8,000/-	
	Total	71,800/-	

11.4 Activity No.: 10.4
Title : Meeting of the Writing Team to discuss and finalize the draft of the manuscript
Proposed Duration: July, 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1	TA for 6 participants (by Air 4)	50,000/-	
2	DA to 6 participants (260x6x5)	7,800/-	
3	Honorarium to 6 participants (200x6x5)	6,000/-	
4.	Contingency(Working lunch, tea/ coffee, payment to outside authors for typing, photocopy)	8,000/-	
	Total	71,800/-	

11.5 Activity No.: 10.5
Title : Workshop to review the draft manuscript by Experts and teachers
Proposed Dates: August - September, 2003 (5 Days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 10 participants (by Air 4)	65,000/-	
2.	DA to 10 participants (260x10x5)	13,000/-	
3.	Honorarium to 20 participants (200x20x5)	20,000/-	
4	Actual conveyance to local 10 participants @ Rs. 500/- per person (500x10x5)	25,000/-	
	Contingency (Tea/Coffee, Working Lunch, payment to outside authors for Typing/ Photocopying)	7,000	
	Total	1,30,000/-	

11.6 Activity No.: 10.6
Title: Final editing of the Textbook
Proposed Dates: November, 2003 (5 Days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1	TA for 6 participants (by Air 4)	50,000/-	
2	DA to 6 participants (260x6x5)	7,800/-	
3.	Honorarium to 6 participants (200x6x5)	6,000/-	
4	Contingency (Tea/Coffee, Working Lunch, payment to outside authors for Typing/ Photocopying)	8,000/-	
	Total	71,800/-	

11.7 Activity No.: 10 7
Title : Workshop to review the Hindi version of the manuscript
Proposed Dates: December, 2003-January, 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 10 participants (by Air 4)	65,000/-	
2	DA to 10 participants(260x10x5))	13,000/-	
3.	Honorarium to 20 participants (200x20x5)	20,000/-	
4	Actual conveyance to local 10 participants @ Rs 500/- per person (500x10x5)	25,000/-	
	Contingency (Tea/Coffee, Working Lunch, payment to outside authors for Typing/ Photocopying)	7,000/-	
	Total	1,30,000/-	

12. Expected end – product:

Text-book in Science and Technology for Class VIII (English and Hindi)

13. (a) **Plans for utilization and dissemination of the end product (s)**

The manuscript will be sent to the publication Department of the council for publication and printing. The printed textbook will be made available to schools of different states/Uts.

(b) **Plans for Evaluation of the outcome:** NIL

(c) **Plans for follow up / Feedback on utilization of the outcome**

It will be taken up after the materials have been in use for a few years

14. **Personnel Involved**

14.1 **Name and designation of the Programme Coordinator**

Dr K M PANT, Reader

14.2 **Name and designation of the Associated Faculty**

1. Prof. J.S. Gill
2. Prof. S C. Jain
3. Dr. V.P. Srivastava, Reader
4. Sh. R. Joshi, Sr. Lecturer(SG)

Signature
(Programme Coordinator)
Date: 18 2.2003

Signature
(Head of the Department)
Date 14/02/03

Abstract

1. **Title of the Project:**

   Development of Textbooks in Mathematics at Upper Primary Stage (Class VIII) (English and Hindi)

2. **Specific Objectives:**

   To develop Textbooks in mathematics for Class VIII (English and Hindi)

3. **Methodology:**

   Through in-house activity, writing, Review Workshop and editing associating outside experts/teachers as indicated in Column 10

3. **Plans for utilising the outcome:**

   The manuscripts will be made available to the Publication Department of the Council for publication and printing Books shall be utilized by the students and teachers for Class VIII.

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	Development of Textbooks in mathematics at Upper Primary Stage (Class-VIII) (English and Hindi)
3.	**(a) Type of the Programme**	Development
	(b) Category of the Programme	On going
	(c) If the Programme is carried over, mention the present PAC Code No.	6 2
4.	**Total Duration of the Programme As phased in Column 10 (months)**	Round the year
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5.	**(a) Stage of Education to which the Programme is meant**	Upper Primary
	(b) If the Programme is meant for a group with special needs	No
	© If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	N A
6.	**Beneficiaries**	Students/Teachers

7. Need and justification:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

On the basis of National Curriculum Framework for School Education 2000, new syllabus in mathematics for Upper Primary Stage has been developed On the basis of this new syllabus, textbook for Classes VI and VII mathematics have been already developed Therefore, there is a need to develop Textbook for Class VIII mathematics based on the new syllabus

8. (a) Specific Objectives:

To develop Textbooks in mathematics for Class VIII (English and Hindi)

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Main tasks involved in executing the project are :

i) Meeting of the NCERT faculty and outside authors to plan writing of the Class VIII mathematics textbook.

ii) Development of the first draft of Class VIII textbook by authors

iii) Meeting of the authors to discuss the first draft.

iv) Revision of the first draft by the authors

v) Review and revision of the first draft of the textbook in a workshop.

vi) Planning meeting for Hindi version of the manuscript.

vii) Meeting of the authors for finalization of the English manuscript.

viii) Development of the Hindi version of the textbook

ix) Preparation of the Press copy of the English Version including preparation of illustrations.

x) Review and finalization of the Hindi version in a workshop

xi) Preparation of press copy of the Hindi Version including preparation of illustrations

xii) Proof Reading of English and Hindi versions.

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organised	Proposed dates From	To	Estimated Expenditure
1	2	3	4	5
1	Development of the chapters of Class VIII Mathematics textbook by authors	April 2003	May 2003	In-house
2	Meeting of the authors for review of the chapters	May 2003	June 2003	40,000/-
3	Revision of the chapters by the authors	June 2003	-	In-house
4	Meeting of the authors to review the draft manuscript	June 2003	July 2003	40,000/-
5	Revision of the draft manuscript by the authors	July 2003	-	In-house
6	Meeting of the authors and few practising teachers to discuss and finalize the first draft of the manuscript	July 2003	August 2003	70,000/-
7	Revision of the manuscript by the authors	August 2003	September 2003	In-house
8	Workshop to review the finalized manuscript by experts and teachers and distribution of the work for Hindi Version	September 2003	-	1,60,000/-
9	Finalization of the manuscript by the authors	September 2003	October 2003	In-house
10	Final editing of the manuscript in a meeting attended by editors	October 2003	November 2003	60,000/-
11.	Development of Hindi version of the manuscript	October 2003	November 2003	In-house
12	Workshop to review the Hindi version of the manuscript	December 2003	January 2004	70,000/-
13.	Printing of English and Hindi versions of the textbooks for Class VIII	December 2003	March 2004	In-house
14	Computer Assistant @ Rs 5500/- per month for one year			66,000/-
15	Contingency: Photocopy, computer typing and cost of floppy to be paid to outside authors			74,000/-
	Total			5,80,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1	**Activity No.:**	10.2
	Title:	Meeting of the authors for review of the chapters
	Proposed Dates:	May, 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1	T.A/D.A/ honorarium for 4 non local/ local authors for 3 days	20,000/-	-
2.	Contingency	20,000/-	-
	Total	40,000/-	-

11.2	**Activity No.:**	10 4
	Title:	Meeting of the authors to review the draft manuscript
	Proposed Duration:	June, 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1	T A /D A / Honorarium for 4 non local/local participants for 3 days	20,000/-	
2	Contingency	20,000/-	
	Total	40,000/-	

11.3	**Activity No.:**	10.6
	Title:	Meeting of the authors and few practising teachers to discuss and finalize the first draft of the Manuscript
	Proposed Duration:	July, 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	T A /D A Honorarium for 6 local / non local authors/teachers for 5 days	35,000/-	
2	Contingency	35,000/-	
	Total	70,000/-	

11.4 Activity No.: 10.8
Title: Workshop to review the finalized manuscript by experts & teachers and distribution of the work for Hindi Version
Proposed Duration: September 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1	T A /D A. Honorarium to 10 non-local/ participants for 5 days	75,000/-	
2	Conveyance/honorarium for 18 local participants for 5 days	48,000/-	
	Contingency· Tea/Coffee/Lunch/ payment to authors for photocopying/ computer typing	37,000/-	
	Total	1,60,000/-	

11.5Activity No.: 10.10
Title: Final editing of the manuscript in a meeting attended by editors
Proposed Duration: October / November 2003 (8 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1	T A /D.A / Honorarium for 2 editors for 8 days	30,000/-	
2	Contingency Tea/Coffee/Lunch/payment to editors for photocopying/computer typing etc	30,000/-	
	Total	60,000/-	

11.6 Activity No.: 10.12
Title: Workshop to review the Hindi version of the manuscript
Proposed Duration: December, 2003/January, 2004 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1	T A /D A / Honorarium for 10 local/non local participants for 5 days	35,000/-	-
2	Contingency Tea/Coffee/Lunch/payment to authors for Photocopying/computer typing, etc.	35,000/-	-
	Total	70,000/-	

12. Expected end–product

Textbook of mathematics for Class VIII (English and Hindi)

13. (a) Plans for utilization and dissemination of the end product (s)

The Text-book will be made available to schools of different State/UTs

(b) Plans for Evaluation of the outcome: Nil

(c) Plans for follow up/Feedback on utilization of the outcome:

It will be taken up after the materials have been in use for a few year

14. Personal Involved

14.1. Name and designation of the Programme Coordinator

Mahendra Shanker, Lecturer (S.G)

14.2. Name of designation of the Associated Faculty

1. Dr Surja Kumari, Professor
2. One more faculty member to be included

Signature 18/2/03
(Programme Coordinator)
Date

Signature
(Head of the Department)
Date 16/02/03

Abstract

1. **Title:**

   Teachers' Handbook on Integration of Science with Technology at the Upper Primary Stage

2. **Specific Objectives:**

   To bring out a Teacher's Handbook containing materials for teachers, specifically on hand-on-activity, problem-solving and critical thinking questions

3. **Methodology:**

   - To involve teachers in development
   - Workshop for editing first draft
   - Review workshop
   - Final editing

4. **Plans for Utilizing the Outcome:**

   To be used by teachers for transacting new S&T curriculum

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Teacher's Handbook on Integration of Science with Technology at the Upper Primary Stage
3.	**Type of the programme**	Development
	(b) Category of the programme	New
	(c) If the progamme is carried over, mention the present PAC code No.	-
4.	**Total duration of the progamme as phased in column 10 (months)**	21 months
	(a) Date of which programme commenced	April 2003
	(b) Target date of completion	December 2004
5.	**(a) Stage of Education to which the Programme is meant**	Upper Primary
	(b) If the Programme is meant for a group with special needs	It will also benefit GSN
	(c) If the programme is State/Region/Agency specific, please specify the State/Region/Agency	N A
6.	**Beneficiaries**	Teachers

7. Need and justification:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

Teachers need a Teacher's Handbook for lesson planning and to transact new S&T curriculum (NCF-2000)

8. (a) Specific Objectives:

To bring out a Teachers' Handbook containing materials for teachers, specially on hand-on-activities, problem-solving and critical thinking questions

(b) Methodology :

(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Main tasks involved in executing the project are·

- To involve teachers in development
- Workshop for editing first draft
- Review workshop
- Final editing

(c) Proposed supporting Staff/JPF/CA, if any : One JPF

9.	**Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
	(a)NCERT Constituents	RIE's	Involvement of teachers
	(b)Outside agency	Schools	- do -

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	**Activities proposed to be organized**	**Proposed dates**	**Estimated Expenditure (If any)**
1	**2**	**3**	**4**
1	Developing format	June 2003	In-house
2	First workshop (1 day)	October 2003	21,000/-
3	2^{nd} workshop (1 day)	January 2004	21,000/-
4.	One JPF for 12 months		27,000/-
	Total		69,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.8
Title: Meetings of authors (Ist and 2^{nd} workshops)
Proposed Dates: October 2003 & January2004

S.No.	**Item of Expenditure**	**Estimated Expenditure**	**Remarks, if any**
1.	Ist meeting (1 day) 12 participants	12, 000/-	
2.	DA to participants	3, 200/-	
3.	Honorarium, Contingency	5, 800/-	
4	2^{nd} workshop	21, 000/-	
	Total	42,000/-	

11.2 Activity No.: 10.9 JPF for 6 months Rs 27,000/-

Total Rs 69 000/-

12. Expected end–product : Draft Handbook will be prepared

13. (a) Plans for utilization and dissemination of the end product (s)

To be disseminated to concerned teachers

(b) Plans for Evaluation of the outcome

To be evaluated by teachers as at 13(a)

(c) Plans for follow up/feedback on utilization of the outcome

Feedback to be obtained

14. Personnel Involved

14.1 Name and designation of the Programme Coordinator:

Prof P K Bhattacharyya

14.2 Name of designation of the Associated Faculty.

1. Dr. K.M. Pant
2. Dr. Dinesh Kumar
3. Sh. R Joshi
4. Prof. J S. Gill
5 Dr V.P Srivastava
6. Two technicians from Workshop
& 7. to fabricate & try new hands-on activities

Signature
(Programme Coordinator)
Date: 18|02|03

Signature
(Head of the Department)
Date 18|02|03

Abstract

1. Title of the Project:

Assessment of laboratory requirements for carrying out practicals in Science & Technology at secondary stage

2. Specific objectives:

To assess the laboratory requirements for carrying out practicals in Science and Technology at secondary stage

3. Methodology:

(i) The requirements of the materials need to carry out the practicals will be identified, using "Laboratory Manual In Science and Technology for Secondary Stage", discussion with school teachers (interview) and visit to schools.
(ii) A group meeting of the faculty with the school teachers/experts will be held to finalize the requirements identified under (i)
(iii) A Market survey will be conducted to find out the comparative cost assessment of the identified items and finalizing the items using cost effective approach
(iv) Documentation of the report

4. Plans for utilizing the Outcome:

The submitted report will be used by the teachers, teacher educators and administrators

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Assessment of laboratory requirements for carrying out practicals in Science & Technology at secondary stage
3.	**Type of the programme**	Development
	(b) Category of the programme	New
	(c) If the programme is carried over, mention the present PAC code No.	-
4.	**(a)Total duration of the programme. As phased in column 10 (months)**	12 Months April 2003
	(b) Date on which programme to be commenced.	March, 2004
	(c) Target date of completion	
5.	**(a) Stage of Education to which the Programme is meant**	Secondary
	(b) If the Programme is meant for a group with special needs	-
	(c) If the programme is State/Region/Agency specific, please specify the State/Region/Agency	-
6.	**Beneficiaries**	Students/Teachers/Teacher educators and educational administrators

7. Need and justification:
(If an on going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

For the successful and effective implementation of the science curriculum proposed in National Curriculum Framework for School Education (2000), a laboratory manual in Science and Technology at Secondary Stage is being developed by DESM, NCERT. However, the manual has proposed/suggested various practicals keeping in view the needs of curriculum. It is assumed that all the schools around the country will have laboratory facilities. However, the laboratory facilities may vary from school to school depending upon their geographical location and the support they get from the government

Keeping in view the variation in laboratory facilities, an assessment of laboratory requirement for carrying out practicals in Science and Technology at secondary stage will be essential so that the recommended laboratory manual prepared in Science and Technology at secondary stage will get a meaning full support adopting cost effective approach.

8. (a) Specific Objectives:

To assess the laboratory requirements for carrying out practicals in Science and Technology at secondary stage

(b) Methodology :
(If a research programme, please also indicate sample, research questions / Hypotheses and tools).

(i) The requirements of the materials need to carry out the practicals will be identified, using "Laboratory Manual In Science and Technology for Secondary Stage", discussion with school teachers (interview) and visit to schools.
(ii) A group meeting of the faculty with the school teachers/experts will be held to finalize the requirements identified under (i)
(iii) A Market survey will be conducted to find out the comparative cost assessment of the identified items and finalizing the items using cost effective approach
(iv) Documentation of the report

9. **Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
(a)NCERT Constituents	-	-
(b)Outside agency	Schools, Colleges & University Departments	Academic

10. Phasing of the Programme with precise information on Activities (including in-house activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	**Activities proposed to be organized**	**Proposed dates From To**	**Estimated Expenditure (If any)**
1.	Identification of the requirements of the materials needed to carry out the practicals	April 2003 to June 2003	In house
2.	Meeting of school teachers and experts to finalize the requirement of materials needed to carry out the practicals	July 2003-August 2003	19,520/-
3.	To find out the cost of different items through market survey, identified activity (1)	September 2003 – November 2003	In house
4.	Documentation of report	December 2003-February 2004	In house
		Total	19,520/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.:	10.2
Title:	Meeting of school, college and university teachers to finalize the requirement of materials needed to carry out the practicals
Proposed Dates:	July 2003 (2 days)

S.No.	**Item of Expenditure**	**Estimated Expenditure**	**Remarks, if any**
1.	TA for 3 persons	12,000/-	
2	DA for 3 persons (260x3x2)	1,560/-	
3.	Conveyance for 3 local participants (260x3x2)	1,560/-	
4.	Honorarium for 6 participants (200x6x2)	2,400/-	
5.	Contingency (Tea/coffee, working lunch)	2,000/-	
	Total	19,520/-	

12. Expected end – product:

Report of laboratory requirements in Science and Technology at secondary stage.

13. (a) Plans for utilization and dissemination of the end product (s)

The teachers, teacher educators and the administrators will use the submitted report

(b) Plans for Evaluation of the outcome –

(c) Plans for follow up/Feedback on utilization of the outcome -

14. Personnel Involved:

14.1 Name and designation of the Programme Coordinator:

Dr. Anjni Koul, Lecturer

14.2 Name of designation of the Associated Faculty:

1 Prof. R.D. Shukla, Head, DESM

2 Dr. Brahm Prakash, Professor

3.Dr. Dinesh Kumar, Reader

4.Dr. Gagan Gupta, Reader

Signature
Programme Coordinator
Date. 18 02 03 .

Signature
Head of the Department
Date· 18.02.03

Abstract

1. Title of the Programme:

Development of a Source Book for out-of-school S&T activities

2. Specific Objectives:

Often there are repetition of projects/exhibits in the Science Exhibitions The students and their guides are not aware of exhibits in various categories developed already, their trend, element of innovation, etc Moreover hints on new areas are to be explained as well as some guidance on fabrication have to be given so as to achieve excellence in quality of the projects/exhibits

3. Methodology:

Organisation like Vigyan Prasar (DST) NCSM NISTAD, Science Museums, Planetaria, Ocean development, Sankalp, concerned NGOs will be invited to a seminar to present papers and share this experience leading to review and guidelines for learners, development of quality project/exhibits

4. Plans for Utilizing the outcome.

Feedback to be received subsequently

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Development of a Source Book for Out-of-School S&T activities
3.	**(a) Type of the programme**	Development
	(b) Category of the programme	On-going
	(c) If the progamme is carried over, mention the present PAC code No.	N A
4.	**(a)Total duration of the progamme. As phased in column 10 (months)**	12 months
	(b)Date of which programme commenced	April 2003
	©Target date of completion	April 2004
5.	**(a) Stage of Education to which the Programme is meant**	Upper Primary to Senior Secondary
	(b) If the Programme is meant for a group with special needs	N.A.
	(c) If the programme is State/Region/Agency specific, please specify the State/Region/Agency	N A.
6.	**Beneficiaries**	Teachers, Students and Managers of Science & Technology exhibition

7. Need and justification:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

- Relevant materials have been collected. survey (students. teachers, exhibits during last 10 years) has been conducted
- Students who prepare projects/ exhibits every year do not have any sourcebook. though the JNNSE is being organized since 1971 The source book ,among others will help the children and guide teachers to select topic and prepare projects professionally.

8. (a) Specific Objectives:

Often there are repetitions of projects/exhibits in the science exhibitions Students and their guides are not aware of exhibits in various categories developed already, their trend, element of innovations, etc. Moreover hints on new areas to be explored as well as some guidance for fabrication have to be given so as to achieve excellence in quality of projects/ exhibits.

(b) Methodology:
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Main tasks involved in executing the project are:

Orgaisations like Vigyan Prasar (DST), NCSM, Science Museums, Planetaria, Ocean development, Sankalp, concerned NGOs, outstanding individuals who has significant contribution in this area will be invited to a seminar to present papers and share their experience leading to review of existing exhibits and framing of guidelines for development of projects/exhibits by the students.

(c) Proposed supporting Staff/JPF/CA, if any One JPF

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
(a)NCERT Constituents		
(b)Outside agency	As at 8 (b) above	To formulate guidelines regarding trend, new areas, etc

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	Activities proposed to be organised	Proposed dates		Estimated Expenditure (if any)
		From	To	
1	2	3	4	5
1	In-house activities in building up data base of information write up of various chapters	July 2003		-
2	Conference with organizations mentioned at 9	September 2003		48,000.-
3	JPF for six months	July 2003	January 2003	27,000 -
	Total			75,000 -

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10 2
Title: Conference with organizations mentioned at 8(b) & 9
Proposed Dates: September, 2003 (1 day)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	TA to 15 participants (by air – 2)	40, 000/-	
2	DA to participants (260x15)	3, 900/-	
3	Honorarium (200x15)	3,000/-	
4	Contingency (Working lunch, tea/coffee etc)	1,100/-	
	Total	48,000/-	

12. Expected end – product

(a) Identification of trend, new areas for projects/exhibits
(b) Guidelines for fabrication and measurement in O - S – A

13. (a) Plans for utilization and dissemination of the end product (s):

A document will be published for dissemination to schools

(b) Plans for Evaluation of the outcome

Formative Evaluation will be built in

(c) Plans for follow up/feedback on utilization of the outcome

Feedback to be received subsequently

14. Personnel Involved

14.1 Name and designation of the Programme Coordinator:

Prof P K Bhattacharyya

14.2 Name of designation of the Associated Faculty:

1 Prof K B Gupta
2 Dr K M Pant
Sh R Joshi
4 Dr Gagan Gupta

Signature
(Programme Coordinator)
Date

Signature
(Head of the Department)
Date 12/02/03

Abstract

1. **Title of the Project:**

   Try-out, modification and dissemination of already developed Multimedia Package in Chemistry for Class XI

2. **Specific Objectives:**

   (i) To try out the developed multi-media package in selected schools

   (ii) To modify the multi-media package according to the results of try-out

   (iii) To disseminate this field tested multi-media package through Publication Division

3. **Methodology:**

   Evaluation sheets to fields test the package will be prepared The package will be tried out in about 50 schools of Delhi and Demonstration Schools of RIEs. Feedback, thus, received will be used to improve the package 1000 copies of the final version of this multi-media package on CD will be made available for dissemination purposes through Publication Division

4. **Plan for utilising the outcome:**

   Dissemination through CD mode

ROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent/Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHMATICS**
2.	**Title of the Programme**	Try-out, modification and dissemination of already developed Multimedia Package in Chemistry for Class XI
3.	**a) Type of the Programme**	Development
	b) Category of the Programme	On-going
	c) If the Programme is carried over, mention the present PAC Code No.	6 10
4.	**Total Duration of the Programme As phased in Column 10 (months)**	12 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of Completion	March 2004
5.	**(a) State of Education to which the Programme is meant**	Senior Secondary
	(b) If the Programme is meant for a group with special needs	N A
	(c) If the programme is State/Region / Agency specific, please specify the State / Region / Agency	N A
6.	**Beneficiaries**	Students / Teachers

7. Need and justification:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The production script on the topics (which were selected in one of the textbook writers meetings on the basis of their conceptual difficulty level) (i) Electronic structure of atom, (ii) Periodic Properties of elements, and (iii) Chemical bonding and molecular structure had been prepared. These topics have been converted into a multimedia package This package needs to be pilot tested in some selected schools and subsequently modified 1000 copies of the final version of this package on CD will be made available for dissemination purpose through Publication Division

8. (a) Specific Objectives:

- (i) To try out the developed multi-media package in selected schools
- (ii) To modify the multi-media package according to the results of try-out
- (iii) To disseminate this field tested multi-media package through Publication Division

(b) Methodology:
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Evaluation sheets to field test the package will be prepared The package will be tried out in about 50 schools of Delhi and Demonstration Schools of RIEs. Feedback, thus, received will be used to improve the package 1000 copies of the multi-media package on CD will be made available for dissemination purposes through Publication Division.

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
(a) NCERT Constituents	DCETA, CIET	Academic and Technical
(b) Outside Agency	-	-

10. Phasing of the Programme with precise information on Activities (including in-house activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	**Activities proposed to be organised**	**Proposed dates**		**Estimated Expenditure (If any)**
1	**2**	**3**	**4**	**5**
1	(a) Pilot testing of Multimedia package in selected schools (b) Finalization of the multi-media package	April 2003	May 2003	(a) 10,000/- (b) 1,73,000/- (already committed) being carried over from last year
2	Production of 1000 copies of Multimedia package on CD for dissemination	July 2003	-	70,000/-
3	Purchase of PC with printer and UPS for In-house work on Multimedia package	April 2003	-	35,000/-
	Total.			2,88,000/

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.:	10.1 & 10.2
Title:	1. (a) Pilot testing of multimedia package in selected schools (b) Finalization of the multi-media package; 2 Production of 1000 copies of Multimedia for Dissemination
Proposed Dates :	April-July 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1	Finalization of CD	1,73,000/-	(already committed) being carried over from last year
2	Dissemination of CD	70,000/-	
	Total	2,43,000/-	

12. Expected end-product

Multimedia package in the form of CD-ROM

13. (a) Plans for utilization and dissemination of the end product (s)

Dissemination through CD mode

(b) Plans for Evaluation of the outcome

It will be field tested in different schools

(c) Plans for follow up / Feedback on utilization of the outcome

Feedback would be received in the form of evaluation sheets and incorporated in other multimedia package that may be developed later

14. Personal involved:

(a) Name and designation of the Programme Coordinator

Dr H O. Gupta, Professor

(b) Name(s) and designation of the other faculty member(s) involved

(a) Prof R D Shukla Head, DESM
(b) Shri Dharam Prakash, Reader, CIET
(c) Head, DCETA
(d) Nominated faculty members

Signature	**Signature**
Programme Coordinator	Head of the Department
Date 15\02\03	Date 18\02\03

Abstract

1. **Title of the Programme:**

   Development of (a) Virtual Experiment, and (b) Real Time Measurement

2. **Specific Objectives:**

   VL will complement and supplement laboratory experiments and it will be a very efficient and time saving tool for the teachers and students. Secondary Schools having computer without a proper Laboratory or teacher/demonstrator will be benefited most

3. **Methodology:**

   This will be mainly an in-house activity The package will be field tested with the help of teachers and students

4. **Plans for Utilizing the Outcome:**

   KVS and chain of schools to be approached for trying those in the prototype phase

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**		**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**		Development of (a) Virtual Experiment (b) Real time Measurement
3.	**(a) Type of the Programme (Please tick)**		Development
	(b) Category of the Programme		On-going
	(c) If the Programme is carried over, mention the present PAC Code No.		NA
4.	**Total Duration of the Programme As phased in Column 10 (months)**		24 months
	(a) Date on which programme commenced		1.4.2002
	(b) Target Date of completion		It will continue as a development programme
5.	**(a) Stage of Education to which the programme is meant**		Secondary
	(b) If the Programme is meant for a group with special needs		It will also benefit GSN
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency		N A
6.	**Beneficiaries**		Students, Teachers

7. **Need and justification on:**
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

- In this era of IT, VL modules and Real Time Measurement have to enter school laboratories and the new NCERT S&T curriculum has to be implemented using this mode also

- Three modules of Virtual Laboratory experiments (Class IX Physics) will be ready by the end of the current financial year

8. (a) **Specific Objectives:**

VL will complement and supplement laboratory experiments and it will be a very Efficient and time saving tool for the teachers and students Secondary schools (having computers) without a proper laboratory or teacher/demonstrator will be benefited most

(b) **Methodology :**
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Main tasks involved in executing the project are:

This will be mainly an in-house activity The package will be field-tested with the help of teachers and students

(c) **Proposed Supporting Staff / (JPF/CA), if any.** One CA

9.	**Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
	(a) NCERT Constituents	RIE's	Evaluation & Feedback
	(b) Outside Agency	-IITs, DOE	For software/Hardware specification
		-Local schools	For feedback

10. Phasing of the Programme with precise information on Activities (including inhouse-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	Activities proposed to be organised	Proposed dates From		Estimated Expenditure (If any)
		From	**To**	
1.	**2.**	**3.**	**4.**	**5.**
1	In-house activities	Till August 2003		
2	1st Workshop on field-testing/evaluation	2 days in September 2003		10,000/-
3	2nd Workshop on field-testing/evaluation	2 days in December 2003		10,000/-
4	Computer Operator for 6 months @ Rs 5500/- p m			33.,000/-
5	Purchase of Computer Hard & Software, Interface			1,00,000/-
	Total			1,53,000/-

11 Details of each Budget activity under Item No. 10 (in the following format)

11.1 Activity No.: 10 2 & 10 3
Title: Ist & 2nd Workshop on field-testing/evaluation
Proposed Duration: September & December 2003 (2 days each)

Sl. No	Item of Expenditure	Estimated Expenditure	Remarks, If any
1	TA to 10 participants (RIEs & local)	10,000/-	
2	DA for 10 local & non-local participants	5,000/-	
3	Contingency	5,000/-	
	Total	20,000/-	For 2 workshops

12. Expected end-product

1. Virtual Laboratory experiments on CD
2 Real Time Measurement Modules
3. Books on above

13. (a) Plan for utilization and dissemination of end-product(s)

To be disseminated through print and non-print media to schools

(b) Plans for Evaluation of the outcome

Already incorporated at 10

(c) Plans for Follow-up/Feedback on utilization of the outcome

KVS and chain of schools to be approached for trying those in the prototype phase

14. Personnel Involved

14.1 Name & Designation of Programme Coordinator:

Prof P.K. Bhattacharyya

14.2 Names & Designation of other faculty members(s)

1. Prof. R D Shukla
2. Prof. Brahm Prakash
3. Shri R Joshi
4. Dr Gagan Gupta

Signature
(Programme Coordinator)
Date 18|01|03

Signature
(Head of the Department)
Date 17|01|03

Abstract

1. Title of the Project:

Centre for Popularisation of Science

2. Specific Objectives:

1 To create awareness about role of science and technology
2 To develop understanding of basic principles through working models
3. To demonstrate the application of scientific principles through interactive models
4 To provide facilities in the Centre for hands on experience to children/ teachers and teacher educators for trying out innovative ideas.

3. Methodology:

1 Fabrication and installation of models and display of materials
2 Procuring equipment and apparatus for activities
3 Developing guidelines for promotion of science park
4 Demonstration of working models to school students on regular basis
5 Helping the students in conducting investigatory projects
6 Training of science teachers
7 Arranging talks, video programme and celebration of events such as science day and environment day

4. Plan for utilising the outcome:

(i) Interaction and dissemination of materials/activity write-ups
(ii) Dissemination of guidelines for science clubs

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	Centre for Popularisation of Science
3.	**(a) Type of the Programme (Please tick)**	Development/ / Extension/Training
	(b) Category of the Programme	On going
	© If the Programme is carried over, mention the present PAC Code No.	This programme has been invited since 2001
4.	**Total Duration of the Programme As phased in Column 10 (months)**	12 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5.	**(a) Stage of Education to which the programme is meant**	Upper Primary Secondary , Higher Secondary
	(b) If the Programme is meant for a group with special needs	N.A
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	N.A
6.	**Beneficiaries**	Students, Teachers, Teacher Educators, Educational Administrators/Planners

7. Need and justification:

(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

It has been observed that enrolment in basic Sciences at the Higher Secondary Stage is on the decline. It is envisaged that the "Centre for Popularisation of Science" will provide a forum for all stakeholders viz. students, teachers and other educational functionaries to help the understand and appreciate importance of laboratory work in teaching-learning of science. The Centre will also serve as a model for schools and other educational institutions.

In all 17 working models have been fabricated and installed in the 'Science Park'. School children, teachers, teacher trainees from different institutions and functionaries of State Education Departments have already visited the 'Science Park' and have appreciated the models on display. The Union Ministry of Non-Conventional Sources of Energy has sanctioned a sum of Rs 6.31 lakhs to the Council for installation of Solar Energy devices in the 'Science Park'. For the first phase orders for solar energy devices worth Rs. 3 165 lakhs has already been placed following the standard norms and procedure The matter is being pursued to get the devices installed at the earliest The orders for the second part of the sanction will be taken up thereafter. A room adjoining 'Science Park' has been renovated to initiate 'Science Club' activities for school children.

A table models of some of the interactive models on display in the Science Park have been fabricated and the same were displayed at the Jawaharlal Nehru National Science Exhibition for Children held at Hyderabad in November 2002

8. (a) Specific Objectives:

1 To create awareness about role of science and technology
2 To develop understanding of basic principle of science through working models and solar energy devices
3 To demonstrate the application of scientific principles through interactive models
4 To provide facilities in the Centre for hands on experience to children / teachers and teacher educators for trying out innovative ideas

(b) Methodology :

(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

2 Fabrication and installation of new models and display of materials
3 Procuring equipment and apparatus for activities
4 Developing guidelines for promotion of science park
5 Demonstration of working models to school students on regular basis
6 Helping the students in conducting investigatory projects
7 Training of science teachers
8 Maintenance and upkeep for models on display and 'Science Park'
9 Arranging talks, video programme and celebration of events such as science day and environment day

9. **Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
(a) NCERT Constituent	CIET, DCETA, RIEs	Academic
(b)Outside Agency	National Science Centre, National Museum of Natural History, Department of Science and Technology, Solar Energy Centre, Union Ministry of Non-conventional Sources of Energy	Financial/ Academic

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	Activities proposed to be organized	Proposed dates From To	Estimated Expenditure (If any)
1	2.	3	4
1	Fabrication procurement of new Models	April-March, 2003-04	1,00,000/-
2	Visits of Students	-do-	20,000/-
3.	Lectures/video shows	-do-	20,000/-
4	Celebration of events	-do-	15,000/-
5	Equipment for Science Club activities	-do-	50,000/-
6	One JPF @ Rs 4400/- for 12 months	-do-	52,800/-
	Total		2,57,800/-

11. Details of each Budget activity under item No. 10

Nil

12. Expected end–product

(i) Science Park
(ii) Energy Park
(iii) Science Centre

13. (a) Plans for utilization and dissemination of the end product (s)

Write ups of the models will be printed and distributed

(b) Plans for Evaluation of the outcome

Models would be improved/modified from time to time

(c) Plans for follow up / Feedback on utilization of the outcome

Some of the activities will be compiled

14. Personal Involved

14.1 Name and designation of the Programme Coordinator

R. Joshi, Lecturer (S.G)

14.2 Name of designation of the Associated Faculty

Dr Dinesh Kumar, Reader
Dr Gagan Gupta, Reader
Shri R. Joshi, Sr Lecturer (SG)

18/7/03
Signature
Programme Coordinator
Date

Signature
Head of the Department
Date 18/07/03

Abstract

1. Title of the Programme:

Design and Development of Science & Technology Kit for Upper Primary Stage

2. Specific Objective:

(i) To review the existing kit in view of the new content of S&T Text book for refinement vis-a-vis cost, addition functionality, etc of the kit items
(ii) To design and develop the kit items and kit box
(iii) To prepare kit manual/teachers' handbooks

3. Methodology:

The activities will be identified from new S&T textbooks for upper primary stage along with the kit items needed to perform these activities The existing kit items will be reviewed for their quality, functionality vis-a vis cost The new kit items in ISK will be designed and developed so that these are low cost, functional multipurpose and based on new technology The kit box would also be designed and developed to make it light weight, handy and attractive The kit would serve both the purposes of a demonstration kit and student's kit for group activity The kit would also enable the students to perform additional open-ended activities at the upper
primary stage

4. Plans for utilising the outcome:

One Prototype kits will be produced in DESM Workshop for try out and final version for sale to various demanding states/schools

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Design and Development of Science & Technology Kit for Upper Primary Stage
3.	**(a) Type of the Programme**	Development
	(b) Category of the Programme	New
	(c) If the Programme is carried over, mention the present PAC Code No.	N/A
4.	**Total Duration of the Programme As phased in Column 10 (months)**	1 years
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5.	**(a) Stage of Education to which the Programme is meant**	Upper Primary
	(b) If the Programme is meant for a group with special needs	N/A
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	N/A
6.	**Beneficiaries**	Students/Teachers/Teacher-educators

7. **Need and justificatioOn:**

(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The ISK (Integrated Science Kit) for upper primary stage was developed by the then Workshop Department, NCERT and has been in use during the last 2 decades or more The kit was recommended by the MHRD under the project 'Improvement of Science Education in Schools' The kit items have undergone some refinement with time. But in view of the new curriculum of S&T for upper primary stage, there is a need to review the existing kit, design and develop a new kit which would serve as a demonstration it as well as student's kit for group activities

8. (a) Specific Objectives:

(i) To review the existing kit in view of the new content of S&T Text book for refinement vis-a-vis cost, addition, functionality, etc. of the kit items
(ii) To design and develop the kit items and kit box
(iii) To prepare kit manual/teachers' handbooks.

(b)Methodology :

(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

The activities will be identified from new S&T textbooks for upper primary stage along with the kit items needed to perform these activities. The existing kit items in ISK will be reviewed for their quality, functionality vis-a-vis cost The new kit items will be designed and developed so that these are low cost. functional, multipurpose and based on new technology. The kit box would also be designed and developed to make it light weight, handy and attractive The kit would serve both the purposes of a demonstration kit and student's kit for group activity The kit would also enable the students to perform additional open-ended activities at the upper primary stage.

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
(a) NCERT Constituents	-	-
(b) Outside Agency	-	-

10. Phasing of the Programme with precise information on Activities (including in-house activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	**Activities proposed to be organised**	**Proposed dates From**		**Estimated Expenditure (If any)**
		From	**To**	
1	2	3	4	5
1	Identification of activities and requirement of equipment from S&T textbooks for upper primary stage	April 2003	May 2003	In-house
2	Review of the existing kit items for their suitability	June 2003		1.15.000/-
3	Design and development of kit items	July 2003	October 2003	50.000/-
4	Review of the design of the kit items (after Ist proto type)	November 2003		1,15.000/-
	Ist Proto type (Purchase of raw material etc for modified kit items and box)	December 2003	March 2004	50.000/-
	Total			3,30.000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.2 & 10.4
Title: (a) Review of the existing kit items for their suitability
(b) Review of the design of the kit items (after Ist prototype)
Proposed dates. June & November, 2003 (5 days each)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1	TA for 8 non-local participants	60,000/-	
2	DA (260x8x5)	10,400/-	
3	Local Conveyance to 10 participants (260x10x5)	13,000/-	
4	Honorarium (200x18x5)	18,000/-	
5	Contingency (Working lunch, tea/coffee and purchase of materials)	13,600/-	
	Total	1,15,000/-	

12. Expected end–product

Prototype Science and Technology Kit for Upper Primary Stage

13. (a) Plans for utilization and dissemination of the end product (s)

Prototype kits will be produced in DESM Workshop for try-out and final version for sale to demanding states/schools

(b) Plans for Evaluation of the outcome

The kit will be tried out in various schools for its utility

(c) Plans for follow up / Feedback on utilization of the outcome

Feed-back thus received will be utilized for modification of its later versions

14. Personnel involved:

14.1 Name and designation of the Programme Coordinator

Prof H O Gupta

14.2 Name(s) and designation of the other faculty member(s) involved

(1) Prof P.K Bhattacharyya
(2) Dr V P Srivastava, Reader
(3) Dr Dinesh Kumar, Reader
(4) Dr Anjni Koul, Lecturer

Signature
Programme Coordinator

Date: 18/02/03

Signature
Head of the Department

Date: 18/02/03

Abstract

1. **Title of the Project:**

   Development of Books in New and Applied Areas of Science under the Project **'Reading to Learn'**

2. **Specific Objectives:**

   To prepare science books in new and applied areas of science in Hindi and English and make them available to the students.

3. **Methodology:**

   Main tasks involved in executing the project are-

   New and important areas in science are identified by an Advisory Committee of scientists. The job of writing books are assigned to the experts/scientists working in these areas. After one third manuscript is ready, the author concerned discusses the approach, language and subject matter with other scientist authors in the team and finally an approach for writing is adopted. When full manuscript is ready, coordinator edits the books, makes the language palatable and finally gets the manuscript printed.

4. **Plans for utilising the outcome:**

   Books developed under the project are priced publication. These books are sold through normal mechanism of the Council.

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Development of books in New and Applied Areas of Science under the project 'Reading to Learn'
3.	**(a) Type of the Programme**	Development
	(b) Category of the Programme	On going
	(c) If the Programme is carried over, mention the present PAC Code No.	6.9
4.	**Total Duration of the Programme As phased in Column 10 (months)**	Round the year
	(a) Date on which programme commenced	1987
	(b) Target Date of completion	2004
5.	**(a) Stage of Education to which the Programme is meant**	Upper Primary Secondary Senior Secondary
	(b) If the Programme is meant for a group with special needs	N A
	© If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	N A.
6.	**Beneficiaries**	Students Teachers Common Public

7. **Need and justificatioOn:**
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

It goes without saying that in the age of Science and Technology; students should be exposed to new frontiers of science and technology. There are also students who want to know much more about new (modern) areas of science than what precisely have been provided in science curriculum at school level. At the same time it is also not practically possible to cover all new areas in curriculum. For such areas of science, there are no suitable and authentic materials/ supplementary books, which can be made available to the curious and motivated students at an affordable price. Therefore, a strong need was felt to develop science books especially in Hindi in frontiers of science by associating top scientists of the country and make such books available to these students. 'Reading to Learn' project serves this purpose. It is expected that books developed under this project will expose students with new emerging areas of science in an interesting way and will help in inculcating value system and develop scientific temper in students. Now a few books will also be developed in English considering the demand of students.

Nearly 38 books have been printed under the Project. Out of which 35 books are already on sale. Two books are in press and 4 are being finalised. In many cases, the first edition of the books (10 thousand books) are sold and the books are reprinted. Areas like biotechnology, biosciences, computer science, nuclear science, energy, food nutrition, cosmology and space science, remote sensing, medical science, basic sciences, marine science and oceanography etc. are covered. Areas like electronic media/communication (multimedia). DNA finger printing, geophysical prospecting, polymer science, weather science and renewable energy, environment sciences are going to be covered soon.

8. (a) **Specific Objectives:**

To prepare science books in new and applied areas of science in Hindi and English and make them available to the students.

(b) **Methodology :**
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

The main tasks involved in executing the project area.

New and important areas in science are identified by an Advisory Committee of Scientists The job of writing books are assigned to the experts/scientists working in these areas After one third manuscript is ready, concerned author discusses the approach, language and subject matter with other scientist and authors in the team and with members of Advisory Committee and finally an approach for writing is adopted. When full manuscript is ready, coordinator edits the books, makes the language palatable and finally gets the manuscript printed.

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
NCERT Constituents		
Outside Agency	Scientists/senior faculty from various research/academic institutions	Academic

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	**Activities proposed to be organized**	**Proposed dates From To**	**Estimated Expenditure (If any)**
1	2	3.	4
1.	Meeting of the Advisory Committee to identify the specific areas in science/ technology in which books are to be developed	April-May 2003	25,860/-
2	Commissioning of authors and assigning work of writing the books	June 2003	In-house
3.	Review of the material developed in a meeting of Advisory Committee	January 2004	25,860/-
4	Editing of the materials and finalization of books developed	February-March 2004	-
5	Submission of books for printing (Printing charges)	May, 2003	40,000/-
6	Appointment of a Junior Project Fellow @ Rs. 4400/- per month	April 2003 - March, 2004	52,800/-
7.	Payment to the authors (Three authors) @ Rs. 10,000/- per author		30,000/-
	Total		1,74,520/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.: 10.1
Title: Meeting of the Advisory Committee
Proposed Dates: April-May, 2003

S.No.	**Item of Expenditure**	**Estimated Expenditure**	**Remarks, if any**
1	2	3	4
1	Ta for 8 experts (8x2000)	16,000/-	
2	DA for 8 experts for 2 days (2x8x260)	4,160/-	
3	Honorarium for 8 experts for 2 days (2x8x260)	3,200/-	
4	Tea/coffee	500/-	
5.	Typing, photocopying and miscellaneous expenses	2,000/-	
	Total:	25,860/-	

11.2 Activity No.: 10.3
Title: Review of the material developed
Proposed Duration: January, 2004

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	TA for 8 experts (8x2000)	16,000/-	
2	DA for 8 experts for 2 days (2x8x260)	4,160/-	
3.	Honorarium for 8 experts for 2 days (2x8x260)	3,200/-	
4.	Tea/coffee	500/-	
5.	Typing, photocopying and miscellaneous expenses	2,000/-	
	Total·	25,860/-	

12. Expected end – product

New Books in frontiers of Science

13. (a) Plans for utilization and dissemination of the end product (s)

Published books are priced publications and normal procedure is followed for their dissemination.

(b) Plans for Evaluation of the outcome

Users Feedback

14. Personnel Involved

14.1 Name and designation of the Programme Coordinator

Dr. R.D. Shukla, Professor and Head, DESM (Coordinator)
Prof. Hukum Singh

14.2 Name of designation of the Associated Faculty

Other faculty members will be associated depending on the need

Signature
Programme Coordinator
Date

Signature
Head of the Department
Date

Abstract

1. **Title of the Project:**

Integration of Disaster Management and Mitigation into NCERT curricula

2. **Specific objectives:**

(i) To analyse the resource materials available on disaster management and mitigation
(ii) To analyse NCERT curricula for all stages of schooling
(iii) To develop guidelines and materials on disaster management and mitigation for integration in the School Curriculum

3. **Methodology:**

(i) Survey and identification of resource materials on disaster management and mitigation (April-May)
(ii) Analysis of NCERT Curricula for all stages (May-October)
(iii) Integration of content/concepts on disaster management and mitigation into curricula

4. **Plans for utilizing the outcome:**

Material developed will be used for integration of disaster management and mitigation into school education

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Integration of Disaster Management and Mitigation in NCERT curricula
3.	**(a)Type of the programme**	Development/Research
	(b) Category of the programme	New
	© If the programme is carried over, mention the present PAC code No.	N.A
4.	**(a)Total duration of the programme. As phased in column 10 (months)**	12 months
	(b)Date on which programme to be commenced.	April 2003
	©Target date of completion	March 2004
5.	**(a) Stage of Education to which the Programme is meant**	All stages
	(b) If the Programme is meant for a group with special needs	N.A
	(c) If the programme is State/Region/Agency specific, please specify the State/Region/Agency	N.A
6.	**Beneficiaries**	Students/Teachers/Teacher educators

7. **Need and justification:**
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

Natural calamities likes earthquakes, floods, drought, landslides and chemical disasters through accidents cause heavy loss of life and property. Schools and children are affected in several ways It is envisaged that the educational activities would create awareness, preparedness for disaster management and mitigation. Govt. of India through high Powered Committee has got prepared National Plan for disaster management and mitigation. Education has been identified as a crucial sector which can contribute significantly in preparing children and teachers to helping disaster mitigation and management The National Plan under the Prime Minister control will be monitored by Home Ministry The plan envisages long term perspective of preparing children, teachers and communities to participate in disaster mitigation and management. A variety of resource materials has been prepared for various sectors. In view of the above it is necessary to analyse NCERT Curricula and integrate information on disaster management and mitigation at various stages. The request has also been received from the Home Ministry for integration of disaster management and mitigation in school curricula.

8. (a) Specific Objectives:

(i) To analyse the resource materials available on disaster management and mitigation
(ii) To analyse NCERT curricula for all stages of schooling
(iii) To develop guidelines and materials on disaster management and mitigation for integration in the School Curricula
(iv) To identify areas/themes for supplementary materials

(b) Methodology:
(If a research programme, please also indicate sample, research questions / hypotheses and tools).

(i) Survey and identification of resource materials on disaster management and Mitigation
(ii) Analysis of NCERT Curricula for all stages
(iii) Integration of content/concepts on disaster management and mitigation into curricula

9. **Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
(a)NCERT Constituents	NIE Departments	Academic
(b)Outside agency	KVS, NVS, Directorate of Education, National Centre for Disaster Management New Delhi, IIPA	Administration/Academic

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	**Activities proposed to be organized**	**Proposed dates From**	**To**	**Estimated Expenditure (If any)**
1.	Survey and identification of resource materials on diaster management and mitigation	April 2003	May 2003	In-house
2	Analysis of curricula for different stages (One JPF for 12 months @Rs.4,400/- p.m.)	April 2003	March 2004	52,800/-
3	Guidelines for integration of information on disaster management and mitigation into curricula	November 2003	January 2004	1,70,000/-
	Total			2,22,800/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No. : 3
Title: Meeting of experts/school teachers to develop Guidelines For integration
Proposed Dates: November 2003 - January 2004 (5 days)

S.No.	**Item of Expenditure**	**Estimated Expenditure**	**Remarks, if any**
1	TA to 15 non local participants	1,00,000/-	
2	TA to 10 local participants (260x10x5)	13,000/-	
3	Honorarium @ Rs. 200 (200x25x5)	25,000/-	
4	Contingencies (Books, tea/coffee etc)	12,500/-	
5	DA to 15 non-local participants (260x15x5)	19,500/-	
	Total	1,70,000/-	

12. Expected end–product:

Report

13. (a) Plans for utilization and dissemination of the end product (s)

Report will be used for Integration of Disaster-management and mitigation into school curricula.

(b) Plans for Evaluation of the outcome –

15. Personnel Involved:

(a) Name and designation of the Programme Coordinator:

Dr. J S. Gill, Professor

(b) Name of designation of the Associated Faculty:
1. Shri R.Joshi, Sr. Lecturer
2. Dr.Anjni Koul, Lecturer
3. Help of faculty of DEE and DESSH as nominated by its Heads

Signature
Programme Coordinator
Date

Signature
Head of the Department
Date. 18.4.3

Abstract

1. Title of the Project:

Orientation of KRPs (PGTs) in Biology for Hr. Sec. Classes

2. Specific Objectives:

The specific objectives of the programme are·

(i) To emphasise the need and significance of newly introduced topics in our text books;
(ii) To impart knowledge and skill for proper understanding and effective teaching,
(iii)To improvise and develop equipments/experiments and materials for effective teaching–learning in classroom

3. Methodology:

Methodology involves selection of KRPs, identification of topics, discussion and further explanation on the topics both difficult and new ones and development of materials and guidelines for utilisation in future programmes.

4. Plans for utilising the outcome:

The oriented KRPs will be utilised by the collaborating agencies in training their classroom teachers for effective teaching of Biology in Class XI and XII The developed material will be printed and disseminated for further utilization during the training programmes of + 2 biology teachers

PROFORMA FOR PROGRAMME PROPOSALS FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**		DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS (DESM)
2.	**Title of the Programme**		Orientation of KRPs in Biology for Hr. Sec. Classes
3.	**(a) Type of the Programme (Please tick)** **(b) Category of the Programme** **(c) If the Programme is carried over, mention the present PAC Code No.**		Development and Training New
4.	**Total Duration of the Programme As phased in Column 10 (months)**		Ten Months
	(a) Date on which programme commenced		May 2003
	(b) Target Date of completion		Feb 2004
5.	**(a) State of Education to which the programme is meant**		Hr. Secondary
	(b) If Programme is meant for a group with special needs		N.A.
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency		National
6.	**Beneficiaries**		Students and Teachers

7. **Need and justification:**
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The tremendous growth in the field of biological sciences specially in the areas of genetic and biotechnology and a high degree of environmental degradation has affected all of us and our society. This has led to the revision of curriculum and development of textbooks with many new and modern topics

There is an urgent need to provide knowledge for proper understanding and effective teaching of newly introduced concepts in our textbooks. For this, some in-service training/ orientation has to be given to the existing biology teachers teaching higher secondary classes. Keeping this in mind, a programme to orient some senior teachers in Biology is proposed. This is to prepare them as Key Resource Persons for imparting further training to Resource Persons and classroom teachers

8. (a) **Specific Objectives:**

The programme is aimed to following specific objectives

- To emphasise the need and significance of new topics introduced in our textbooks
- To provide knowledge about the newly introduced topics for proper understanding and effective teaching in classroom.
- To guide the teachers to teach biology specially new topics effectively both in theory and practicals classes.
- To improvise and develop equipments/experiments and materials for effective teaching-learning in classroom.

This is to fulfil the developed gap in teaching-learning process after the introduction of new textbooks.

(b) **Methodology :**
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

The following steps will be followed as a part of methodology to complete the programme:

1 Selection of PGTs with both Zoology and Botany background having at least 10 years teaching experience to Hr. Sec. Classes in collaboration of agencies (KVS/Navodaya/ Delhi Admn.) following our textbooks.

2. Identification of topics (both new and difficult) which need further explanation both in theory and practicals in class XI and XII.

3 Further elaboration and discussion on the selected topics in the presence and guidance of subject experts/author for proper understanding and productive teaching in the classroom.

4. Development of guidelines and materials to be utilised in further training programmes.

9.	Collaborating Agencies, if any	Name of Agency	Nature of Collaboration
	(a) NCERT Constituents	DM Schools and RIEs	Teachers/Subject Experts
	(b) Outside Agency	University Deptts.	Subject Experts

10. Phasing of the Programme with precise information on Activities (including in-house activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	Activities proposed to be organised	Proposed dates From		Estimated Expenditure (If any)
		From	To	
1.	2.	3.	4.	5.
1.	Identification of KRPs in collaboration of agencies following our textbooks	April 2003	May 2003	In-house activities
2	Identification of topics (both difficult and new - for classes XI & XII)	May 2003	June 2003	70,700/-
3.	Orientation of PGTs from Northern and Central Regions	July 2003	Aug. 2003	2,20,000/-
4.	Orientation of PGTs from Eastern & Southern regions	September 2003	October 2003	2,40,000/-
5.	Development of guidelines & materials for Training	November 2003	December 2003	1,04,500/-
6.	Printing of materials and guidelines			20,000/-
	Total:			6,55,200/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1Activity No.: 2
Title: Identification of topics
Proposed Dates: May-June 2003 (3 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1	2	3	4
1	TA to 7 non-local participants	40,000/-	
2.	DA (260x7x3)	5,460/-	
3.	Hon. To 15 participants(200x15x3)	9,000/-	
4.	Conveyance to 8 local participants (260x8x3)	6,240/-	
5.	Contingency (Tea/Coffee, books etc.)	10,000/-	
	Total	70,700/-	

11.2 Activity No.: 3
Title: Orientation of PGTs from Northern and Central Regions
Proposed Duration: July-August 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	TA to 25 non-local participants	1,30,000/-	
2.	DA to 25 (260x25x5)	32,500/-	
3.	Hon. To 35 participants (200x35x5)	35,000/-	
4.	Conveyance to 10 local participants (260x10x5)	13,000/-	
5.	Contingency (Tea/coffee, books, lab. materials etc.)	9,500/-	
	Total	2,20,000/-	

11.2 Activity No.: 4
Title: Orientation of PGTs from Eastern and Southern regions
Proposed Duration: September-October 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1	TA to 34 non-local participants	1,50,000/-	
2.	DA (34x260x5)	44,200/-	
3.	Hon. To 35 participants (35x200x5)	35,000/-	
4.	Conveyance to 1 local participant (260x1x5)	1,300/-	
5	Contingency (Tea/coffee, books, lab. Materials etc.)	9,500/-	
	Total	2,40,000/-	

11.2 Activity No.: 5
Title: Development of guidelines and materials for training
Proposed Duration: November-December 2003 (5 days)

S.No.	Item of Expenditure	Estimated Expenditure	Remarks if any
1.	2.	3.	4.
1.	TA to 10 non-local participants	60,000/-	
2	DA (260x10x5)`)	13,000/-	
3.	Hon. To 15 participants (200x16x5)	16,000/-	
4.	Local conveyance to 5 participants (260x5x5)	6,500/-	
5.	Contingency (Tea/coffee, books etc.)	9,000/-	
	Total:	1,04,500/-	

12. Expected end – product

Trained PGTs for further training of teachers

13. (a) Plans for utilization and dissemination of the end product (s)

Oriented KRPs will provide training/orientation to RPs and classroom teachers

(b) Plans for Evaluation of the outcome

Evaluation of impact on teaching in classroom in the form of result and understanding of new topics

14. Personnel Involved

14.1 Name and designation of the Programme Coordinator

Dr S.C Jain, Professor

14.2 Name(s) and designation of the other faculty member(s) involved

Dr. J.S Gill, Professor
Dr. K.B Gupta, Professor
Dr Dinesh Kumar, Reader
Dr Jatinder Singh Lecturer

Signature
Programme Coordinator
Date: 18-2-03

Signature
Head of the Deptt. Institute
Date. 18/02/03

Abstract

1. **Title of the Project:**

Training of Resource persons/teachers in Chemistry at the Higher Secondary Stage

2. **Specific Objectives:**

(i) To elicit teachers difficulties in the day-to-day classroom processes
(ii) To prepare training material which may serve as the remedial material to outcome the identified difficulties
(iii) To train teachers in effectively handling classroom interactions
(iv) To provide hands on laboratory experiences to the teachers to carry out laboratory work effectively in the school situations

3. **Methodology:**

The following sequence of steps will be followed to execute the programme in the proper manner:

(i) Preparation of questionnaire to identify teachers felt needs about the training
(ii) Identification of hard spots
(iii) Development of the remedial materials
(iv) Transactions with teachers to tackle the identified hard spots
(v) Strengthening of conceptual frame work through laboratory experiences
(vi) Discussion on the type and dynamics of the project work to be taken by the students in schools

4. **Plan for utilising the outcome:**

(i) Training manual/material will be sent to organizational bodies of teachers for utilization
(ii) Trained personnel will help in imparting literature training to other persons.

PROGRAMME PROPOSALS FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**		**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**		Training of Resource persons/teachers in Chemistry at the Higher Secondary Stage
3.	**(a) Type of the Programme (Please tick)** **(b) Category of the Programme** **(c) If the Programme is carried over, mention the present PAC Code No.**		Training New N.A.
4.	**Total Duration of the Programme As phased in Column 10 (months)**		24 months
	(a) Date on which programme commenced		April 2003
	(b) Target Date of completion		March 2005
5.	**(a) Stage of Education to which the programme is meant**		Higher Secondary
	(b) If the Programme is meant for a group with special needs		N.A.
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency		KVS/NVS/Teachers of Autonomous organizations following NCERT curriculum
6.	**Beneficiaries**		Resource Persons and Teachers

7. Need and justification on:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

As per NCFSE-2000, class XI book in Chemistry is already being used by the practising teachers and the class XII book which is likely to be available in March 2003 will come in vogue. Teachers need to be oriented towards the approach of new curricular material. The approach would evidently highlight, IUPAC recommendations and the use of symbols, units and nomenclature; due emphasis on problem solving ability and linkage of curricular material with recent technological advancements. The above mentioned points, therefore, automatically reflect the need of face to face interaction with the teachers.

8. (a) Specific Objectives:

- (iii) To elicit teachers difficulties in the day-to-day classroom processes
- (iv) To prepare training material which may serve as the remedial material to outcome the identified difficulties
- (v) To train teachers in effectively handling classroom interactions
- (vi) To provide hands on laboratory experiences to the teachers to carry out laboratory work effectively in the school situations

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

The following sequence of steps will be followed to execute the programme in the proper manner:

- (vii) Preparation of questionnaire to identify teachers felt needs about the training
- (viii) Identification of hard spots
- (ix) Development of the remedial materials
- (x) Transactions with teachers to tackle the identified hard spots
- (xi) Strengthening of conceptual frame work through laboratory experiences
- (xii) Discussion on the type and dynamics of the project work to be taken by the students in schools

(c) Proposed supporting staff (JPF/CA), if any N A.

9.	**Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
	(a) NCERT Constituents	RIE's	
	(b) Outside Agency	University Personnel to act as Guest Educators KVS/NVS/ other autonomous organizations following NCERT curriculum	-

Phasing of the Programme with precise information on Activities (including inhouse-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organised	Proposed dates		Estimated Expenditure (If any)
		From	To	
1.	2.	3.	4.	5
1	Preparation of questionnaire to identify training needs.	May 2003	June 2003	In-house
2.	Analysis of responses	June 2003	July 2003	In-house
3	Preparation of training material	August 2003	November 2003	5,000/- (typing etc.)
4	Organization of Training Programme - Phase I	December 2003		3,76,800/-
5	Organisation of Training Programme - Phase II	March 2004		3,76,800/-
	Total			7,58,600/-

11 Details of each Budget activity under Item No. 10 (in the following format)

11.1	**Activity No.**	10.3
	Title:	Preparation of Training Material
	Proposed Duration:	August 2003

S. No	Item of Expenditure	Estimated Expenditure	Remarks, If any
1.	Typing of the Training Material prepared	5,000/-	
	Total:	5,000/-	

11.2 Activity No.: 10.9
Title: Organisationl of Training Programme Phase I
Proposed Dates: December 2003 (10 days)

S. No.	Items of Expenditure	Estimated Expenditure	Remarks, if any.
1.	TA to 35 non local participants	2,10,000/-	
2.	DA to 35 non local participants (260 x 35 x 10)	91,000/-	
3.	TA to 3 subject experts	30,000/-	
4.	DA to 3 subject experts (260 x 3 x 10)	7,800/-	
5.	Honorarium to subject experts (200 x 3 x 10)	6,000/-	
6.	Actual conveyance to 5 local participants (260 x 5 x 10)	13,000/-	
7.	Contingency (typing, stationery, drawing of illustrations. tea/coffee etc)	19.000/-	
	Total	3,76,800/-	

11.3 Activity No.: 10.5
Title: Organisation of Training Programme Phase II
Proposed dates: March 2004

S. No.	Items of Expenditure	Estimated Expenditure	Remarks, if any.
1	TA to 35 non local participants	2,10,000/-	
2.	DA to 35 non local participants (260 x 35 x 10)	91,000/-	
3.	TA to 3 subject experts	30,000/-	
4.	DA to 3 subject experts (260 x 3 x 10)	7,800/-	
5.	Honorarium to subject experts (200 x 3 x 10)	6,000/-	
6.	Actual conveyance to 5 local participants (260 x 5 x 10)	13,000/-	
7.	Contingency (typing, stationery, drawing of illustrations, tea/coffee etc.)	19,000/-	
	Total	3,76,800/-	

12. Expected end-product

i) Training manual /material for imparting similar training.
ii) Trained resource persons who can impart similar training to others.

13. (a) Plan for utilization and dissemination of end-product(s)

i) Training manual/ material will be sent to organisational bodies of teachers for utilisation
ii) Towards personnel will help in imparting likewise training to other persons

(b) Plans for Evaluation of the outcome

A questionnaire will be administered to the clientele group to access efficacy of the training imparted at the end of the training.

14. Personnel Involved

14.1 Name and Designation of Programme Coordinator

1.Dr. I.P. Aggarwal, Professor

14.2 Name and designations of the Associated Faculty

1 Prof. R.D. Shukla, lHead, DESM
2. Dr. Brahm Prakash, Prof.essor. DESM
3 Dr. H O Gupta, Professor, DESM.
4. Three guest educators.

18/2/03

Signature
Programme Coordinator
Date:

Signature
Head of the Department
Date: 18/02/03

Abstract

1. Title of the Project:

Training of Resource Persons/Teachers in Physics at the Higher Secondary Stage

2. Specific Objectives:

It is felt that the teachers of states and agencies such as KVS, NVS, etc. are in a need to get an extensive training in the topics included in new physics textbooks and also in new laboratory equipment and experiments. It is therefore proposed to train resource persons and teachers of each state. Persons trained through these training programmes will train other teachers of their respective states or agencies. A multiplier effect is thus envisaged.

3. Methodology:

In the first year, *i.e.*, during 2003 – 04, the department proposes to conduct training programmes (each of ten days duration) relevant to class XI physics textbook. In second year, *i e*, 2004 – 05, the department proposes to conduct two more training programmes, each of 12 days duration, relevant to class XII physics textbook. In second year, it is also envisaged to devote some time to class XI physics textbook. Laboratory training on new equipment and experiments is also proposed during these programmes.

In the first year's first programme (December 2003), we like to invite resource persons and teachers from northern, eastern and north-eastern regions. In second programme (February 2004) we will invite persons from southern and western regions. In each training programme 40 persons will be trained.

Various states and agencies, which are using NCERT textbooks, will be requested to identify their resource persons and teachers and their specific training needs. Identification of topics (both new and difficult) that need further explanation will be made in collaboration with teachers and subject experts. An appropriate guidelines and training material(s) will be developed and used during the training programmes.

4. Plans for utilising the outcome:

The trained resource persons and teachers will train other teachers of their respective states or agencies.

PROGRAMME PROPOSAL FOR THE YEAR 2003 – 04

1.	**Name of the NCERT Constituent/ Department**	**DEAPRTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	Training of Resource Persons/Teachers in Physics at the Higher Secondary Stage
3.	**(a) Type of the Programme**	Training
	(b) Category of the Programme	New
	(c) If the Programme is carried over, mention the present PAC Code No.	N.A.
4.	**Total Duration of the Programme as phased in Column 10 (months)**	24 months
	(a) Date on which programme commenced	April 2003
	(b) Target date of completion	March 2005
5	**(a) Stage of Education to which the programme is meant**	Higher Secondary
	(b) If the programme is meant for a group with special needs	Teachers teaching physics at higher secondary stage
	(c) If the programme is state/Region/ Agency specific, please specify the State/Region/Agency	First training programme in each year will be for resource persons/teachers belonging to northern, eastern and north-eastern regions and the second training programme will be for southern and western regions.
6.	**Beneficiaries**	Teachers and students

7. **Need and Justification**

New NCERT textbook in Physics for class XI is in use by various states and agencies. Class XII physics textbook is likely to be published by March 2003. These books are based on the new curriculum as per NCFSE-2000 and include many new topics in physics and related technologies. Therefore, there is a need of arranging training programmes for resource persons and teachers of different states and agencies, which are using NCERT books. Through this proposal the department intend to conduct four training programmes. In first year, *i.e.*, 2003 – 04 two training programmes will be organised relevant to class XI physics textbook. Similarly during 2004 – 05, two training programmes will be conducted relevant to class XII physics textbook. An exposure of the resource persons and teachers to new laboratory equipment and experiments is also envisaged during these training programmes.

8. **(a) Specific Objectives**

It is felt that the teachers of states and agencies such as KVS, NVS, etc. are in a need to get an extensive training in the topics included in new physics textbooks and also in new laboratory equipment and experiments. It is therefore proposed to train resource persons and teachers of each state. Persons trained through these training programmes will train other teachers of their respective states or agencies. A multiplier effect is thus envisaged.

(b) Methodology

In the first year, *i.e.*, during 2003 – 04, the department proposes to conduct training programmes (each of ten days duration) relevant to class XI physics textbook. In second year, *i.e.*, 2004 – 05, the department proposes to conduct two more training programmes, each of 12 days duration, relevant to class XII physics textbook. In second year, it is also envisaged to devote some time to class XI physics textbook. Laboratory training on new equipment and experiments is also proposed during these programmes

In the first year's first programme (December 2003), we like to invite resource persons and teachers from northern, eastern and north-eastern regions. In second programme (February 2004) we will invite persons from southern and western regions. In each training programme 40 persons will be trained.

Various states and agencies, which are using NCERT textbooks, will be requested to identify their resource persons and teachers and their specific training needs. Identification of topics (both new and difficult) that need further explanation will be made in collaboration with teachers and subject experts. An appropriate guidelines and training material(s) will be developed and used during the training programmes

9. **Collaborating Agencies, if any:**

	Name of Agency	**Nature of Collaboration**
(a) NCERT constituents, including RIEs:	Demonstration Model Schools	Identification of training needs and selection of resource persons & teachers
(a) Outside Agency:	Various states/ agencies (using NCERT Textbooks)	Identification of training needs and selection of resource person & teachers

10. Phasing of the programme with precise information on activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	Activities proposed to be organised	Proposed dates		Estimated Expenditure (if any)	Remarks
		From	To		
1.	Preparation of questionnaire to identify training needs	April 2003	May 2003	Nil	In-house
2.	Identification of difficult Topics	June 2003		95,000/-	
4	Organisation of First Training Programme	December 2003		3,39,000/-	
5	Organisation of Second Training Programme	February 2004		3,39,000/-	
	TOTAL			7,73,000/-	

11. Details of each budget activity under item no. 10 (in the following format)

11.1 **Activity No.:** 10.2
Title: Identification of difficult topics
Proposed Dates: June 2003 (three Days)

S. No.	Item of Expenditure	Estimated Expenditure (Rs.)	Remarks, If any.
1	TA to 7 non-local participants	70,000/-	
2.	DA to 7 non-local participants (260×7×3)	5,460/-	
3	Actual conveyance for 5 local participants (260x5x3)	3,930/-	
4	Honorarium (200×7×3)	4,200/-	
5.	Contingency (tea/coffee, books etc.)	11,410/-	
	TOTAL	95,000/-	

11.2 Activity No.: 10.3
Title: Finalization of training material
Proposed Dates: October 2003 (3 Days)

S. No.	Item of Expenditure	Estimated Expenditure (Rs.)	Remarks, If any.
1.	TA to 7 non-local participants	70,000/-	
2.	DA to 7 non-local participants (260×7×3)	5,460/-	
3.	Actual conveyance for 5 local participants (260x5x3)	3,930/-	
4.	Honorarium (200×7×3)	4,200/-	
5.	Contingency (Books, periodicals, tea/coffee etc.)	11,410/-	
	TOTAL	95,000/-	

11.3 **Activity No.:** 10.4 & 5
Title: Organisation of First & Second Training Programme
Proposed Dates: December 2003 (ten Days)

S. No.	Item of Expenditure	Estimated Expenditure (Rs.)	Remarks, If any.
1	TA to 38 non-local participants	1,85,000/-	
2.	DA to 38 non-local participants (260x38×10)	90,000/-	
3.	Honorarium to 3 subject experts (200×3×10)	6,000/-	
4.	Actual conveyance charges to 5 local participants (260×5×10)	13,000/-	
5.	Contingency (books, periodicals, tea/coffee etc.)	45,000/-	
	TOTAL	3,39,000/- each	

12. Expected end-product:

Trained resource Persons and Teachers

13. (a) Plans for utilization and dissemination of the end products(s)

These trained resource persons and teachers will train other teachers of their respective states or agencies.

(b) Plans for evaluation of the outcome

At the end of each programme, a questionnaire will be distributed to all participants

14. Persons involved:

14.1 Name and designation of the Programme Coordinator:

Dr. Gagan Gupta, Reader

14.2 Name and designation of the associated faculty:

Dr. B K. Sharma, Professor
Dr V.P Srivastava, Reader
Shri R Joshi, Lecturer (Selection Grade)

Signature
Programme Coordinator
Date: 18 Feb 2003

Signature 18\2\03
Head of the Department
Date

Programme Proposal For the Year 2003-2004

1.	**Name of the NCERT Constituent / Department**	DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS
2.	**Title of the Programme**	Apprenticeship Training
3.	**(a) Type of the Programme (Please tick)**	Training
	(b) Category of the Programme	On going
	(c) If the Programme is carried over, mention the present PAC Code No.	7 09
4	**Total Duration of the Programme as phased in Column 10 (months)**	
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5	**(a) State of Education to which the programme is meant**	Primary, Upper Primary, Secondary
	(b) If the Programme is meant for a group with special needs	N A
	(c) If the programme is State / Region / Agency specific, please specify the State/ Region / Agency	No
6.	**Beneficiaries**	Students

7. Need and justificatioOn:

(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

This is a statuary obligation to the Govt. of India

8. (a) Specific Objectives:

To Train ITI Apprentices

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

On the job training in different technical vocational trades as per the guidelines of the Apprenticeship Training.

9.	**Collaborating Agencies, if any**	**Neme of Agency**	**Nature of Collaboration**
	(c) NCERT Constituents	-	-
	(d) Outside Agency	Regional Directorate of Apprenticeship Training RDAT Kanpur & Faridabad.	

10. Phasing of the Programme with precise information on Activities (including inhouse-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	**Activities proposed to be organised**	**Proposed dates**		**Estimated Expenditure (If any)**
		From	**To**	
1.	**2.**	**3.**	**4.**	**5.**
1.	(i)Training in different Trades in work-shop unit in DESM for 1 year in Machine, Dye Making Turner, Fitter etc. & 2 years for Plastic Injection Moulding or Carpentry etc (ii) Summer vacation training for 45 days for B.E. IIIrd Year students (iiii) Vocational training for 3 years Diploma course (iv) Special training for plastic processing and operation for 15 days for the students of ITI	April 2003	March 2004	1,50,000/-
		Total		1,50,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

N.A.

12. Expected end – product: N.A.

13. (a) Plans for utilization and dissemination of the end product (s)

Apprentices get Certificate after training, which is essential for getting job in Govt. / Private Organisation.

14. Personal Involved

14.1 Name and designation of the Programme Coordinator

Abu Bashar, Technical Officer

14.2 Name(s) & Designation of the other faculty member(s) involved:

(i) Shri P Chandra, Technical Officer
(ii) Shri S.S. Wadhwa
(iii) Shri P.K. Khiani
(iv) Shri G D. Sharma &
(v) Technical Staff of the Department

Signature
Programme Coordinator
Date. 13-2-03

Signature
Head of the Department
Date. 13/02/03

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent/Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	Title of the Programme	Production of Science Kits
3.	**(a) Type of the Programme**	Extension
	(b) Category of the Programme	On-going
	© If the Programme is carried over mention the present PAC Code No.	7.10
4.	**Total duration of the Programme as phased in Column 10 (months)**	Continuous
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5	**(a) Stage of Education to which the programme is meant.**	Primary Upper primary
	(b) If the Programme is meant for a group with special needs.	N.A
	(c) If the programme is State/Region Agency specific, please specify, Please specify the State/Region/Agency	N A.
6.	**Beneficiaries**	Students/teachers/teacher-educators

7. **Need and Justification**
(If an on-going/carried over programme, please state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The kit will facilitate in the Science Teaching-Learning process

8. (a) **Specific Objectives**

i)To produce Science Kits

ii)To facilitate improve science teaching-learning

(b) Methodology

(If a research programme, please also indicate sample, research questions/ hypotheses and tools)

To develop Fabricate, Produce and Supply of Science Kits

9.	**Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
	(a) NCERT Constituent	CIET	Nil
	(b) Outside Agency	Educational Institute & State Agencies	Nil

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S. No.	**Activities proposed to be organised**	**Proposed dates**		**Estimated Expenditure (If any)**
		From	**To**	
1.	Maintenance of Machines and moulds (i) Money is received from different agencies and different demanding States' Department (ii) Fabrication of different Education Models (iii) Production of Science Kits (Primary Science Kit, Integrated Science Kit & Mini Tool Kit)	During the whole year		1,50,000/-
	Total			1.50,000/-

11 Details of each Budget activity under Item No. 10 (in the following format)

N.A.

12. Expected end product: N.A

13. **(a) Plan for utilization and dissemination of end-product(s)**

The kits are supplied on demand

(b) Plans for Evaluation of the outcome

N.A.

(c) Plans for follow-up/Feedback on utilization of the outcome.

N.A.

14. Personnel Involved

14.1 Name and Designation of Programme Coordinator

Abu Bashar, Technical Officer

14.2 Name(s) and Designation of other faculty member(s) involved

(i) Shri Prakash Chandra, Technical Officer
(ii) Technical Staff of the Department

Signature
Programme Coordinator
Date 18-2-03

Signature
Head of the Department
Date: 18/02/03

Abstract

1. Title of the Project:

'School Science' – A Quarterly Journal

2.. Specific Objectives:

i) To provide a forum to teachers, teacher educators, administrators, researchers and students to disseminate their views, experiences and innovations in the field of science and mathematics education at school level.

ii) To acquaint all those engaged in teaching/learning of science and mathematics at school level with new techniques of teaching these subjects as well as latest development in these fields, and

iii) To disseminate new ideas and latest global trends in the area of science and mathematics at school level and educational aspects related to them.

3. Methodology :

Main tasks involved in executing the project are:

i) Contacting prospective authors/contributors for articles/papers for the journal.

ii) Getting articles/papers, received for publication, reviewed and, if required, modified by the authors in accordance with the suggestions of the reviewer.

iii) Editing of articles and getting illustrations prepared wherever desirable

iv) Communicating with authors/contributors.

v) Scanning various sources for collecting news relating to latest developments in science, mathematics and technology and editing the same for preparing regular features and science news.

vi) Preparation of 'Press Copy' of manuscript of each of the four issues and forwarding the same to the Publication Department for printing and proof reading. Maintaining liaison with Publication Department regarding publication, sales and distribution of journal.

vii) Getting each issue of the journal disseminated through NCERT website in collaboration with DCETA

viii) Organizing the meeting of the Editorial Advisory Board and initiating follow-up action on its recommendations.

4. Plans for utilising the outcome:

Sales through Publication Department

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	'School Science' – A Quarterly Journal
3.	**(c) Type of the Programme (Please tick)**	Extension
	(b) Category of the Programme	
	© If the Programme is carried over, mention the present PAC Code No.	On going 6.13
4.	**Total Duration of the Programme As phased in Column 10 (months)**	12 months
	(a) Date on which programme commenced	1962
	(b) Target Date of completion	April,2003 - March 2004 (To be continued)
5.	**(a) Stage of Education to which the Programme is meant**	Secondary Senior secondary Curriculum Developers Researchers in Science Education
	(b) If the Programme is meant for a group with special needs	N.A.
	© If programme is State / Region/ Agency specific, please specify the State/Region/Agency	-
6.	**Beneficiaries**	Students, Teachers, Teacher Educators, Educational Administrators, Researchers in Science Education

7. **Need and justificatio0n:**

(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

The quarterly journal 'School Science' is being published by the Council since 1962 to disseminate ideas and perceptions concerning various issues related to teaching/ learning of science and mathematics in schools as also research studies for the benefit of researchers working in the area of science and mathematics education. It is one of the extension activities of the DESM.

8. (a) Specific Objectives:

i. To provide a forum to teachers, teacher educators, administrators, researchers and students to disseminate their views, experiences and innovations in the field of science and mathematics education at school level.

ii. To acquaint all those engaged in teaching/learning of science and mathematics at school level with new techniques of teaching these subjects as well as latest development in these fields, and

iii To disseminate new ideas and latest global trends in the area of science and mathematics at school level and educational aspects related to them

(b) Methodology :

(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Main tasks involved in executing the project are ·

i) Contacting prospective authors/contributors for articles/papers for the journal.

ii) Getting reviewed, if required modified, the articles/papers, received for publication by the authors in accordance with the suggestions of the reviewer.

iii) Editing of articles and getting illustrations prepared wherever desirable.

iv) Communicating with authors/contributors.

v) Scanning various sources for collecting news relating to latest developments in science, mathematics and technology and editing the same for preparing regular features and science news.

vi) Preparation of 'Press Copy' of manuscript of each of the four issues and forwarding the same to the Publication Department for printing and proof reading. Maintaining liaison with Publication Department regarding publication, sales and distribution of journal

vii) Getting each issue of the journal disseminated through NCERT website in collaboration with DCETA

viii) Organizing the meeting of the Editorial Advisory Board and initiating follow-up action on its recommendations.

(c) Proposed Supporting Staff / (JPF/CA), if any. NIL

9.

Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
a) NCERT Constituent	Publication Department DCETA	Copy Editing, printing and production, sale and distribution
b) Outside Agency	None	For dissemination through NCERT website on internet

10. Phasing of the Programme with precise information on Activities (including in-house-activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.NO	**Activities proposed to be organised**	**Proposed dates From To**	**Estimated Expenditure**
1.	**2.**	**3.**	**4.**
1	Selection, review, editing of articles, papers/features and preparation of 'press copy' of one issue in each quarter of the year and proof reading	April, 2003-March,2004	In-house
2.	Getting each published issue of the journal on NCERT web site in collaboration with DCETA	As and when an issue is published	In-house
3.	Organising meeting of the Editorial Advisory Board of School Science and undertaking follow-up action	February-March 2004	20.000/-
	Total		20,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 **Activity No.**	10.3
Title:	Meeting of the Editorial Advisory Board of 'School Science'
Proposed Dates	February-March, 2004

S.No.	**Item of Expenditure**	**Estimated Expenditure**	**Remarks, if any**
1	2	3	4
1.	TA for 2 non-local members	17,000/-	
2.	DA for 2 non-local members(260x2)	520/-	
3	Conveyance for 2 local members (260x2)	520/-	
4.	Honorarium to 4 members (200x4)	800/-	
5.	Contingency	1,160/-	
	Total:	20,000/-	

12. **Expected end – product:** 4 issues of the Quarterly Journal 'School Science'

13. (a) **Plans for utilization and dissemination of the end product (s)**

Sales through Publication Department

(b) **Plans for Evaluation of the outcome**

There is a provision of an 'Editorial Advisory Board' for the journal that reviews and monitors the progress besides suggesting steps for all-round improvement of the journal.

© **Plans for follow-up/Feed back on utilisation of the outcome**

i) Follow-up action on the recommendations / suggestions of the 'Editorial Advisory Board'.

ii) Suggestions are invited from subscribers for improvement

14. **Personnel Involved**

14.1 Name and designation of the Programme Coordinator

R Joshi, Lecturer (Selection Grade)

14.2 Name of designation of the Associated Faculty

Prof J.S Gill
Dr. K.M. Pant, Reader
Dr. V.P. Srivastava, Reader

18/2/03
Signature
Programme Coordinator
Date:

Signature
Head of the Department
Date 18/02-03

Abstract

1. **Title of the Programme:**

National Seminar on NCERT and States curricula in Science and Mathematics Education

2. **Specific Objectives:**

To organise a National Seminar for an exchange of innovative curricular practices between States and NCERT in Science and Mathematics education at different stages of School Education

3. **Methodology:**

State representatives attending national seminar will develop Status Studies of their States reflecting innovative practices and education scenario in Science and Mathematics. NCERT(DESM) faculty will also develop approach papers in different disciplines of Science and Mathematics reflecting philosophy and approach of new generation of textual and related instructional materials and present them during the seminar to apprise States resource persons.

4. **Plans for utilising the outcome:**

Report will be distributed among States/UTs

ROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent/ Department**	**DEPARTMENT OF EDUCATION IN SCIENCE AND MATHEMATICS**
2.	**Title of the Programme**	National Seminar on NCERT and States curricula in Science and Mathematics Education
3.	**a) Type of the Programme**	Extension
	b) Category of the Programme	New
	c) If the Programme is carried over, mention the present PAC Code No.	-
4.	**Total Duration of the Programme as phased in Column 10 (Months)**	10 Months
	(a) Date on which Programme commenced	-
	(b) Target Date of Completion	-
5.	**(a) Stage of Education to which the Programme is meant**	All Stages of School Education
	(b) If the Programme is meant for a group with Special Needs	-
	(c) If the Programme is State/Region/ Agency Specific, please specify the State/Region/Agency	State Specific (All the States/UTs of the country will be involved
6.	**Beneficiaries**	Students/Teachers/Teacher-educators

7. **Need and Justification:**
(If an On-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current Financial Year)

After the release of **NCFSE, 2000**, NCERT developed new generation of Syllabi, textbooks and other related materials in Science and Mathematics for different Stages of School Education. Some of the States have also come forward to adapt/adopt NCERT Textbooks/Syllabi in Science and Mathematics, however many of them are still trying to understand the implications of implementing NCERT's new Syllabi/Textbooks in terms of various approaches for curriculum transaction, teacher preparation and other related academic aspects. Some States/UTs also have introduced some changes in Science and Mathematics curriculum at their level. It is, therefore, needed that States should be apprised with new curriculum and curricular materials developed by NCERT. NCERT in turn also should understand what innovative practices are being followed at State level. The proposed seminar basically aims at an exchange of innovative practices between States and NCERT.

8. (a) **Specific Objectives:**

A National Seminar for an exchange of innovative practices between States and NCERT in Science and Mathematics education at different stages of School Education.

(b) **Methodology:**
(If a research programme, Please also indicate sample, research questions/hypotheses and tools)

State representatives attending national seminar will develop Status Studies of their States reflecting innovative practices and educational scenario in Science and Mathematics. NCERT(DESM) faculty will also develop approach papers in different disciplines of Science and Mathematics and present the same during the seminar to apprise the States' representatives with philosophy approach and scope of new generation of textual and related instructional materials

9. **Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
(a) **NCERT Constituents**	DESM	Academic
(b) **Outside Agency**	State-SCERTs Boards	Academic

10. **Phasing of the Programme with precise information on Activities (including in-house activities involving expenditure or otherwise clearly indicating the methodology to be followed)**

S. No.	**Activities Proposed to be Organised**	**Proposed Dates**		**Estimated Expenditure**
		From	**To**	
1	2	3	4	5
1.	Development of Approach Papers in different disciplines of Science and Mathematics	May	June. 2003	In-house
2.	Organisation of National Seminar on NCERT and States innovative practices in Science and Mathematics Curriculum	July	Aug . 2003	3.02.400/-
	Total			3.02.400/-

11. Details of each Budget Activity under item No.10(in the following format)

11.1 **Activity No.:**	10.2
Title:	Organisation of National Seminar on NCERT and States Curricular Practices in Science and Mathematics
Proposed Dates:	July-August, 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
	TA for 60 participants	1,80,000/-	
	DA for 4 days for 60 participants (60 X 260 X 4)	62,400/-	
	Miscellaneous (including Tea, Lunch & Guest Speakers)	60,000/-	
	Total	3,02,400/-	

12. Expected end-product

Seminar Report for Dissemination of NCERT's Curriculum and Textbooks

13. (a) Plans for utilization and dissemination of the end-product(s)

Report will be distributed among States/UTs

(b) Plans for Evaluation of the Outcome

Follow-up action will be initiated to know the adoption/adaptation of curricular materials by States/UTs.

14. Personnel Involved

a) Name and Designation of the Programme Coordinator

Prof. R.D. Shukla

b) Name and Designation of the Associated Faculty

Total DESM Faculty

Signature
Programme Coordinator
Date:

Signature
Head of the Department
Date: 18/02/03

Abstract

1. **Title of the Project:**

State Level Science Exhibition for Children 2003-2004

2. **Specific Objectives:**

i) Popularisation of Science.
ii) Making children realise the relevance of science to society and their responsibilities as scientists in the present information technology age
iii) Promotion of psychomotor and manipulative skills of children and promote creativity in them.
iv) Encouraging problem-solving approach and development of appropriate technology by the application of various principles of science
v) Organization of one-day science popularisation seminar

3. **Methodology** .

The main tasks involved in executing the project are·

i) Identification of main theme of the exhibition and preparation of write-ups on the sub-themes
ii) Providing guidelines to States/Uts for organizing the State Level Science Exhibition and criteria for evaluating the exhibits.
iii) Providing catalytic grants to States/Uts for organizing State Level Science Exhibition.
iv) Settling of accounts with States/Uts and seeking reports from them about the organization of State Level Science Exhibition.
v) Preparation of report

4. **Plan for utilising the outcome:**

(i) Materials/activity write-ups will be used for consideration of participation in the National Science Exhibition for Children-2004
(ii) Dissemination of guidelines to science clubs

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	State Level Science Exhibition for Children: 2003-2004
3.	**(a) Type of the Programme (Please tick)**	Extension
	(b) Category of the Programme	
	© If the Programme is carried over, mention the present PAC Code No.	On going
4.	**Total Duration of the Programme As phased in Column 10 (months)**	Round the Year
	(a) Date on which programme commenced	1 April 2003
	(b) Target Date of completion	31 March 2004
5.	**(a) Stage of Education to which the Programme is meant**	Overall School Education
	(b) If the Programme is meant for a group with special needs	N.A.
	© If programme is State / Region/ Agency specific, please specify the State/Region/Agency	All States/Uts of the country
6.	**Beneficiaries**	Students, Teachers, Teacher Educators, general public

7. Need and justificatioOn:
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

This is the first phase of preparation for the organization of Jawaharlal Nehru National Science Exhibition for Children 2004

8. (a) Specific Objectives:

- ii) Popularisation of Science by organizing one-day science seminar before the commencement of the exhibition
- ii) Making children realise the relevance of science to society and their responsibilities as scientists in the present information technology age
- iii) Promotion of psychomotor and manipulative skills of children and promote creativity in them.
- iv) Encouraging problem-solving approach and development of appropriate technology by the application of various principles of science.

(b) Methodology :
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Main tasks involved in executing the project are :

- i) Identification of main theme of the exhibition and preparation of write-ups on the sub-themes.
- ii) Providing guidelines to States/UTs for organizing the State Level Science Exhibition and criteria for evaluating the exhibits, preceded with one-day science popularisation seminar.
- iii) Providing catalytic grants to States/Uts for organizing State Level Science Exhibition and one-day science popularisation seminar.
- iv) Settling of accounts with States/Uts and seeking reports from them about the organization of State Level Science Exhibition.
- v) Preparation of report.

(c) Proposed Supporting Staff / (JPF/CA), if any. NIL

9. Collaborating Agencies, if any	**Name of Agency**	**Nature of Collaboration**
a) NCERT Constituent	NIE Department, CIET, PSSCIVE, RIEs	
b) Outside Agency	SCERTs. KVS, NVS, Atomic Energy Central Schools	-

10. Phasing of the Programme with precise information on Activities (including in-house activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.No.	**Activities proposed to be organised**	**Proposed dates From To**	**Estimated Expenditure (If any)**
1.	**2.**	**3.**	**4.**
1	State Level Science Exhibition for Children: 2003-2043	4-5 days (Round the year)	As per budget break-up (attached)
			Total· 26,59,000/-

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 Activity No.:	10.1
Title:	State Level Science Exhibition for Children
Proposed Dates:	4-5 days; Round the year

S. No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	Organization of State Level Science Exhibition for Children	26,59,000/-	Keeping in view the rising train and bus fares and the cost of boarding, and organization of one-day science popularisation seminar before the commencement of the exhibition, an overall increase of approximately 20% has been proposed over the previous year's budget.

BUDGET BREAK-UP

State Level Science Exhibition: 2003-2004

S.No.	State/UT	Amount
1.	Andhra Pradesh	1,56,000/-
2.	Arunachal Pradesh	36,000/-
3	Assam	93,000/-
4	Chhatisgarh	60,000/-
5.	Bihar	1,28,000/-
6	Daman and Diu	36,000/-
7.	Goa	36,000/-
8.	Gujarat	1,10,000/-
9.	Haryana	86,000/-
10.	Himachal Pradesh	53,000/-
11.	Jammu (J & K)	36,000/-
12.	Jharkhand	54,000/-
13.	Karnataka	1,20,000/-
14.	Kerala	79,000/-
15.	Madhya Pradesh	1,28,000/-
16.	Maharashtra	1,73,000/-
17.	Manipur	36,000/-
18	Meghalaya	36,000/-
19.	Mizoram	36,000/-
20.	Nagaland	31,000/-
21	Orissa	1,11,000/-
22.	Punjab	78,000/-
23.	Rajasthan	1,10,000/-
24	Sikkim	36,000/-
25.	Tamil Nadu	1,20,000/-
26	Tripura	43,000/-
27.	Uttaranchal	65,000/-
28.	Uttar Pradesh	1,73,000/-
29	West Bengal	1,56,000/-
30.	A & N Islands	36,000/-
31.	Chandigarh	36,000/-
32.	Dadra and Nagar Haveli	21,000/-
33.	Delhi	69,000/-
34.	Lakshadweep	17,000/-
35.	Pondicherry	29,000/-
36.	Srinagar (J & K)	36,000/-
		Total Rs. 26,59,000/-

Amount required in the proposed year Rs. 26,59,000

12. Expected end – product: Report

13. (a) Plans for utilization and dissemination of the end product (s)

Write ups of the best exhibits selected in each State/UT will be considered for participation in the Jawaharlal Nehru National Science Exhibition for Children-2004

(b) Plans for Evaluation of the outcome

The team comprising the faculty members whose names are mentioned at item 14 below will examine the write-ups received from States/Uts and would find out ways and means to improve upon the quality and display of those models which are selected for participation at the National Level Exhibition.

(c) Plans for follow up / Feedback on utilization of the outcome

As stated at 13(b) above

14. Personnel Involved

14.1 Name and designation of the Programme Coordinator

Dr K M.Pant, Reader

14.2 Name of designation of the Associated Faculty

1 Mr.R.Joshi, Lecturer (Selection Grade)
2. Dr. V P Srivastava, Reader
3 Dr Anjni Koul, Lecturer

Signature
Programme Coordinator
Date: 18.2.2003

Signature
Head of the Department
Date: 18\02\03

Abstract

1. **Title of the Project:**

Jawaharlal Nehru National Science Exhibition for Children 2003-04

2. **Specific Objectives:**

- i) To organize National Science Exhibition with a view to expose and encourage scientific talent in children.
- ii) Develop creative thinking
- iii) Stimulate interest in science
- iv) Encourage the problem solving approach
- v) Popularise science among students and masses

3. **Methodology :**

Main tasks involved in executing the project are

- i) Display science exhibition of the models/work done by different constituents of NCERT and NIE Departments
- ii) Selection of the exhibits for JNNSEC in a particular year from the exhibits selected at the State level Science Exhibition in the previous year
- iii) Liaisons work with the host state for organising science exhibition
- iv) Preparation of manuscripts for the Publication entitled 'Structure and Working of Science Models', 'List of Exhibits' and 'Folder' (Publicity Material)
- v) Organisation of National Science Exhibition

4. **Plans for utilising the outcome:**

- i) Above listed material (1-3) will be sent to State Departments of Education and participating schools.
- ii) Distribution of material to the visitors during the exhibition.

PROGRAMME PROPOSAL FOR THE YEAR 2003-2004

1.	**Name of the NCERT Constituent / Department**	**DEPARTMENT OF EDUCATION IN SCIENCE & MATHEMATICS**
2.	**Title of the Programme**	Jawaharlal Nehru National Science Exhibition: 2003-2004
3.	**(b) Type of the Programme (Please tick)**	Extension
	(b) Category of the Programme **© If the Programme is carried over, mention the present PAC Code No.**	On going 6.11
4.	**Total Duration of the Programme As phased in Column 10 (months)**	12 months
	(a) Date on which programme commenced	April 2003
	(b) Target Date of completion	March 2004
5.	**(a) Stage of Education to which the Programme is meant**	Secondary Senior secondary Curriculum Developers Research in Science Education
	(b) If the Programme is meant for a group with special needs	N.A.
	© If programme is State / Region/ Agency specific, please specify the State/Region/Agency	-
6.	**Beneficiaries**	Students, Teachers, Teacher Educators, Educational Administrators, Research in Science Education and other scientific institutes

7. **Need and justificatio0n:**
(If an on-going carried over programme, please also state briefly the progress achieved and the work likely to be completed by the end of the current financial year)

It is an on-going activity; exhibitions are organized at various levels. The exhibition at the National level provides a chance to children from different parts of the country to display their models and exchange ideas thereby leading to achieve some of the objectives of science education.

8. (a) **Specific Objectives:**

- i) To organize National Science Exhibition with a view to expose and encourage scientific talent in children
- ii) Develop creative thinking
- iii) Stimulate interest in science
- iv) Encourage the problems solving approach
- v) Popularise science among students and masses

(b) **Methodology :**
(If a research programme, Please also indicate sample, research questions / hypotheses and tools)

Main tasks involved in executing the project are .

- i) Display science exhibition of the models/work done by different constituents of NCERT and NIE Departments
- ii) Selection of the exhibits for JNNSEC in a particular year from the exhibits selected at the State level Science Exhibition in the previous year
- iii) Liaisons work with the host state for organising science exhibition
- iv) Preparation of manuscripts for the Publication entitled 'Structure and Working of Science Models', 'List of Exhibits' and 'Folder' (Publicity Material)
- v) Organisation of National Science Exhibition

(c) **Proposed Supporting Staff / (JPF/CA), if any.** NIL

9. **Collaborating Agencies, if any**	**Name of Agency**	**Nature of Collaboration**
a) **NCERT Constituent**	DCETA, CIET, NIEs and other constituents of NCERT, RIEs	Academic

10. Phasing of the Programme with precise information on Activities (including in-house activities involving expenditure or otherwise clearly indicating the methodology to be followed)

S.NO	Activities proposed to be organised	Proposed dates From To	Estimated Expenditure
1.	2.	3.	4.
1.	Identification and consent of the host State	April- June 2003	In-house
2.	Selection of the exhibits	June- August 2003	In-house
3.	Organisation of Science Exhibition from different constituents of NCERT	September 2003	1.50 lakh
4.	Liaison work with the host State and scientific institutes	April- November 2003	In-house
5.	Preparation of the manuscripts	July- November 2003	In-house
6.	Organisation of National Science Exhibition	November 2003	21.00 lakhs
7	Preparation of Report on National Science Exhibition	March 2004	In-house
	Total		22.50 lakhs

11. Details of each Budget Activity under item No. 10 (in the following format)

11.1 **Activity No.:** 10.3
Title: Organisation of Science Exhibition from different constituents of NCERT
Proposed Dates: September 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	Organisation of science exhibition	Rs. 1.50 lakh	

11.1 **Activity No.** 10.6
Title: Organisation of National Science Exhibition
Proposed Dates: November, 2003

S.No.	Item of Expenditure	Estimated Expenditure	Remarks, if any
1	2	3	4
1.	Organisation of National Science Exhibition	Rs. 21 lakh	

12. **Expected end – product:** 1 Folder (Publicity material)
2. List of Exhibits
3. Structure and working of Science Models

13. **(a) Plans for utilization and dissemination of the end product (s)**

- Above listed materials will be sent to State Departments of Education and participating schools
- Distribution of material to the visitors during the exhibition

14. **Personnel Involved**

(a) Name and designation of the Programme Coordinator

Dr. K B Gupta, Professor

(b) Name of designation of the Associated Faculty

Prof I.P Aggarwal
Dr K.M Pant, Reader
Shri R Joshi
Ddr Gagan Gupta
Dr Dinesh Kumar Reader
Some more faculty members will be included later on

KBGupta
Signature 18/2/03
Programme Coordinator
Date

Signature
Head of the Department
Date. 18/02/03

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